

TEXAS AGRICULTURAL EXPERIMENT STATION

A. B. CONNER, DIRECTOR,
College Station, Texas

BULLETIN NO. 593

September 1940

COMMERCIAL FERTILIZERS IN 1939-40

G. S. FRAPS, T. L. OGIER, AND S. E. ASBURY

DIVISION OF CHEMISTRY



AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS
T. O. WALTON, President

630.72
T356

[Blank Page in Original Bulletin]

This is the annual Fertilizer Control Bulletin. It contains statistics regarding fertilizers sold in Texas, information regarding the fertilizer law, and analyses of samples of the fertilizer sold by different manufacturers. The extent to which the various manufacturers are coming up to their guarantee is shown.

The total sales of fertilizer in Texas for 1939-40 were 116,307 tons. In 1938-39 the sales were 93,115 tons. In 1937-38 they were 79,640 tons. Cottonseed meal sold as a feed but used as a fertilizer was not included in these totals. Sales of fertilizer were about 30% more than last year. Practically all the sales of mixed fertilizers were confined to about 20 analyses.

Tables are given showing the extent to which the various fertilizer manufacturers met or exceeded their guarantees. The cost of fertilizer was slightly less in 1939-40 than in 1938-39.

The subjects of vitamin B 1 and water culture are discussed.

C O N T E N T S

	Page
Introduction	5
Explanation of Terms	5
Information on the Fertilizer Bag and Tag	6
How to Calculate the Valuation	6
Fertilizer Analyses to be Sold in 1940-41	7
Quantity Sold	8
Quantity of Sales by Grades	8
Quantity of Cottonseed Meal Used as a Fertilizer	9
Composition and Selling Prices of Different Grades of Fertilizer	10
Cost of Plant Food	11
Relation of Cost to Concentration of Fertilizers	12
Comparing Costs of Fertilizer	13
Free Analyses	13
Analysis of Fertilizers, 1939-40	14
Relation of Valuation Guaranteed to Valuation Delivered	15
Averages Below Guarantee	15
Fillers	15
Non-Acid Forming Fertilizers	15
Investigations Under the Fertilizer Law	16
Relation to Experiment Station Work	17
Colloidal Mineral Phosphate	17
Sulphur, Gypsum, and Manganese	17
Greensand	19
Polyhalite and Sewage Sludge	19
Fertilizing Value of Spent Phosphate Catalyst	19
Vitamin B ₁	20
Fertilizers for Water Culture	20
Information Regarding the Use of Fertilizer	21
Summary	22

COMMERCIAL FERTILIZERS IN 1939-40

G. S. Fraps, State Chemist, T. L. Ogier, Associate State Chemist
and S. E. Asbury, Assistant State Chemist

Fertilizer laws require fertilizer to be correctly labeled so that the purchaser can know what he is getting. The object of the fertilizer law is to protect the farmer or other users of fertilizer against misrepresentation of the composition or fertilizing value of the fertilizer as well as manufacturers and dealers against unfair competition due to such misrepresentation.

The first Texas fertilizer law was passed in 1899. It was revised and amended in 1911. The results of the fertilizer inspection have been published in bulletins of the Texas Agricultural Experiment Station regularly since 1906. This is the thirty-eighth Fertilizer Control Bulletin. It contains statistics, definitions of terms, a report on the analyses made in enforcing the provisions of the fertilizer law, and information regarding the use of fertilizers.

EXPLANATION OF TERMS

Nitrogen refers to the total nitrogen in the fertilizer. It is necessary in proper amounts for the development of all parts of the plant, but an excess of nitrogen delays maturity and is liable to promote growth of stalk and leaves at the expense of fruit. Nitrogen is needed by many Texas soils, especially the sandy soils in the eastern and northern parts of the State. Since nitrogen is used in comparatively large quantities by plants and is, to some extent, washed from the soil, it is usually the first element to become depleted from a fertile soil.

Available phosphoric acid is the phosphoric acid (P_2O_5) in fertilizers which can be taken up quickly by plants. Phosphoric acid promotes the fruiting of plants, though it is also necessary for the development of all parts of the plant.

Total phosphoric acid is the entire quantity of the phosphoric acid (P_2O_5) present, whether highly available or not. A guarantee of total phosphoric acid in place of available is made in bone, tankage, rock phosphate, and basic slag.

Potash guaranteed in a fertilizer is required by the law to be soluble in water. Potash, like nitrogen, is needed by all parts of the plant, but especially by stalk and leaves. An excess of potash delays maturity and is liable to promote growth of the stalk and leaves at the expense of the fruit. When potash is abundantly supplied, plants may take up more than they need. Potash is present in soils more abundantly than phosphoric acid.

Valuation per ton represents the approximate average cost of the plant food in the unmixed fertilizer, at retail. It is usually smaller than the price at which the mixed fertilizer is sold, but since it is an average, it may be greater than the prices of some of the unmixed fertilizer materials. The selling price includes cost of mixing, bags, transportation, the profit of the manufacturer, if any, and that of the dealer. The valuations are decided on about September 1, and the prices often change before the chief active fertilizer season, which is February to April in Texas. The valuation sums the value of the three plant foods shown in the analysis into a single figure, and is convenient for this purpose. The fertilizer law permits a deficiency of less than ten per cent in one plant food to be compensated by an excess of another, but if the valuation is four per cent less than the guaranteed valuation, a rebate must be paid to the purchaser. The valuation found compared with the valuation guaranteed shows whether or not the fertilizer as a whole is better or poorer than the guarantee as a whole. The following valuations were used in 1939-40:

	Cents per pound
Nitrogen	12.0
Available phosphoric acid	6.5
Total phosphoric acid in Thomas phosphate, tankage, and bone meal	4.0
Total phosphoric acid in rock phosphate	1.5
Potash	6.0

Names of fertilizers. Fertilizers are frequently named by numbers, such as a 4-8-4 fertilizer, a 6-12-6 fertilizer and so on. In such names, the first figure stands for the percentage of nitrogen, the second for the percentage of available phosphoric acid, and the third for the percentage of water-soluble potash. This is a short and accurate method of naming fertilizers.

Information on the Fertilizer Bag and Tag

A fertilizer tax tag is required to be placed on every bag of fertilizer before it is offered for sale or sold. The guaranteed analysis of the fertilizer is required by law to be printed on the bag or on the tag attached to the bag, so that the purchaser can see what he is buying. Total phosphoric acid may be guaranteed for bone or tankage instead of available phosphoric acid. A guarantee of total phosphoric acid is required in Thomas phosphate or rock phosphate. The information required on the package is as follows:

Net weight
Name of fertilizer in full
Name and address of manufacturer
Guaranteed analysis:
 Nitrogen, per cent
 Available phosphoric acid, per cent
 Potash, per cent

How to Calculate the Valuation

The valuation of a fertilizer is calculated by multiplying the composition by the valuation of each unit of plant food and adding the products. A unit is one per cent of a ton, or 20 pounds; so if the valuation of nitro-

gen is 12 cents a pound, the valuation of a unit is $12 \times 20 = \$2.40$. The valuation of a unit of available phosphoric acid at 6.5 cents a pound would be $6.5 \times 20 = \$1.30$; the valuation for a unit of potash at 6.0 cents a pound would be $\$1.20$. The following is an example of a calculation at the prices given above:

Valuation of 4-8-4 Fertilizer

Nitrogen	4 x \$2.40 =	\$ 9.60
Available phosphoric acid	8 x \$1.30 =	\$10.40
Potash	4 x \$1.20 =	\$ 4.80
Total valuation per ton		\$24.80

Fertilizer Analyses to be Sold in 1940-41

The grades of fertilizer sold in Texas are limited in number. This standardization aids the farmers to become familiar with the different kinds of fertilizer, enables him to decide more readily on the proper kind to be used, enables the agricultural worker to make definite recommendations, and reduces the cost of manufacture and handling, thereby also reducing the cost to the consumer. At a conference with fertilizer manufacturers doing business in Texas, Louisiana, Oklahoma, and Arkansas in July 1940, grades of mixed fertilizer were adopted for these states. This was the sixteenth such conference for Texas manufacturers, and the eighth joint conference. Changes are made at practically every meeting. Grades which have little sale may be dropped, and new or experimental grades may be added.

The grades adopted for Texas are as follows:

GRADES

0-12-4	5-15-0	10-0-10
3-10-0	5-15-5	10-10-0
3-10-3	6-8-4	10-20-10
4-8-4	6-8-8	11-48-0
4-8-6	6-9-3	15-0-14
4-8-10	6-10-7	16-20-0
4-10-0	6-12-6	16-0-0
4-12-4	8-8-8	20-0-0
		42-0-0

MATERIALS

Activated sludge	Nitrate of soda, 16%
Bat guano	Nitrate of soda and potash 15-0-14
Bone meal	Sheep manure
Calcium nitrate	Sulphate of ammonia, 20.5%
Cottonseed meal	Sulphate of potash, 48%
Cyanamid, 21%	Superphosphate, 18%
Cyanamid, 22%	Superphosphate, 20%
Ground phosphate rock	Superphosphate, 32%
Kainit, 20%	Superphosphate, 45%
Lawn and Garden	Soft phosphate with colloidal clay
Manure salts, 30%	Tankage
Muriate of potash, 50%	

Quantity Sold

The quantities of commercial fertilizer sold in Texas for several seasons, from September 1 to August 31, are given in Table 1. These are the actual sales as reported by the manufacturers, and not the tag sales. The tag sales are always a little larger than the actual sales. The sales in 1939-40 were about 30% higher than last season. The largest sales so far made in Texas were 187,215 tons during the season 1928-29. Fertilizer statistics for a number of years to August 31, 1926, have been published in Bulletin 350, and from 1926 to 1938 in Bulletin 572.

Table 1. Fertilizers sold in Texas, (not including cottonseed meal sold as feed but used as fertilizer).

	Tons
1905-06	13,500
1910-11	52,985
1913-14	77,400
1914-15	17,500
1919-20	56,700
1920-21	14,850
1921-22	33,000
1922-23	73,300
1923-24	126,179
1924-25	97,719
1925-26	121,747
1926-27	79,863
1927-28	139,126
1928-29	187,215
1930-31	64,424
1932-33	30,843
1933-34	47,204
1935-36	60,016
1936-37	84,936
1937-38	79,640
1938-39	93,115
1939-40	116,307

Quantity of Sales by Grades

Table 2 contains the sales of fertilizer by grades for four seasons arranged in order according to sales in the season 1939-40. Sales of 4-8-4 fertilizer are highest of all. The 4-12-4 comes second, the 4-8-6 comes third and the 6-10-7 comes fourth. These are in the same order as they were last year.

Table 2. Fertilizer sales by grades in order of tonnage for 1939-40

	1939-40 In tons	1938-39 In tons	1937-38 In tons	1936-37 In tons
4-8-4	30,705	24,171	18,743	23,702
4-12-4	15,285	11,675	10,345	12,433
4-8-6	11,775	9,402	8,107	8,758
6-10-7	7,649	4,708	4,901	4,671
6-8-4	6,790	5,661	4,597	2,920
6-12-6	4,265	3,846	3,643	3,664
Superphosphate, 20%	4,040	3,537	3,377	2,642
4-10-0	4,011	3,827	2,137	2,132
3-10-3	3,650	3,345	2,961	4,150
Sulphate of ammonia	3,064	2,283	2,548	1,610
Cyanamid	3,063	917	919	1,475
Superphosphate, 18%	2,543	2,986	3,516	2,743
11-48-0	2,060	1,905	1,585	1,361
6-8-8	1,767	882	0	0
6-9-3	1,767	1,373	1,055	1,221
3-10-0	1,676	1,834	826	1,220
Nitrate of soda, 15% and 16%	1,641	1,098	1,048	1,314
Bone meal	1,563	1,604	1,342	1,095
16-20-0	1,462	1,338	1,606	1,637
Lawn and garden fertilizer	1,243	1,020	957	157
4-8-10	1,084	862	678	589
5-15-5	872	794	1,525	1,133
Calcium nitrate	828	320	0	0
0-12-4	633	114	247	94
Superphosphate, 32%	427	898	678	538
Superphosphate, 45%	419	265	150	65
10-10-0	276	213	110	91
10-20-10	271	275	311	246
10-0-10	248	144	106	108
Tankage, bat guano and activated sludge	238	214	134	295
Urea and urea meal	171	86	0	0
Muriate of potash, 50%	166	165	207	142
Kainit, 20%	140	156	179	195
Soft phosphate with colloidal clay	130	119	40	138
Phosphate rock (ground)	130	0	0	0
Soil sulphur	109	0	0	0
5-15-0	79	204	216	236
Sheep manure	35	15	16	0
Sulphate of potash, 48%	15	29	44	169
Manure salts, 30%	12	7	5	9
Cottonseed meal	5	179	158	25
Manganese sulphate	0	21	0	0
10-20-0	0	8	14	0
Magnesium sulphate	0	3	5	0
Nitrate of soda and potash 14-0-15	0	3	0	0
6-30-0	0	1	3	0
Basic slag	0	0	10	0
0-15-6	0	0	0	54
9-18-18	0	0	0	952
9-27-9	0	0	0	118
Miscellaneous unmixed fertilizer	0	0	0	17
4-10-7	0	608	591	814
Total	116,307	93,115	79,640	84,933

The tonnage of cottonseed meal reported in Table 2 includes only that tagged with fertilizer tax tags and sold as a fertilizer.

Composition and Selling Prices of Different Grades of Fertilizer

Table 3 contains the average composition, the guaranteed valuation, the valuation found by analysis, and the average retail selling prices per ton, of various grades of fertilizers. The average retail selling price is the average of the cash retail prices furnished to the fertilizer inspector by the dealers. The prices of the same fertilizer may be different in different towns on account of differences in cost of transportation or for other causes. The retail price includes handling costs, carrying charges, and the dealer's profits, as well as the cost of the plant food used in the materials from which the fertilizer is made.

The average valuations found (Table 3) exceed the guaranteed valuations in almost every case. The exceptions are 10-0-10, 10-20-10, muriate of potash, soft phosphate with colloidal clay and 45% superphosphate. In some of these, however, the valuations found are only slightly below the valuations guaranteed, and in other cases, only a few samples were secured.

Table 3. Average composition, valuation and selling prices of grades of fertilizer. 1939-40

Grades	Number averaged	Nitrogen per cent	Available Phos. Acid per cent	Potash per cent	Guaranteed Valuation per ton	Valuation found per ton	Selling price per ton
0-12-4	7		12.44	4.28	\$20.40	\$21.32	\$ 24.00
3-4-11 (garden)	1	2.90	4.24	12.73	25.60	27.75	100.00
3-10-0	5	3.04	11.08		20.20	21.71	25.60
3-10-3	57	3.26	10.25	3.32	23.80	25.22	27.87
3-10-3 (lawn and garden)	1	4.01	11.00	3.49	23.80	28.11	80.00
4-8-4	233	4.08	8.20	4.10	24.80	25.39	28.98
4-8-6	148	4.09	8.30	6.00	27.20	27.77	30.88
4-8-10	18	4.04	8.55	10.04	32.00	32.86	33.97
4-10-0	18	4.17	9.72		22.60	22.65	30.25
4-10-4	1	6.41	11.46	3.62	27.40	34.62	36.00
4-12-4	129	4.16	12.16	4.21	30.00	30.84	32.04
4-12-4 (lawn and garden)	5	5.31	11.93	4.57	30.00	33.73	91.00
5-15-0	2	4.79	15.66		31.50	31.84	34.00
5-15-5	16	5.07	15.75	5.30	37.50	39.00	38.70
6-8-4	66	6.06	8.17	4.21	29.60	30.22	33.14
6-8-8	33	5.89	8.30	7.97	34.40	34.50	35.70
6-9-3	18	5.95	9.10	3.44	29.70	30.24	32.94
6-10-7	120	6.07	10.09	7.04	35.80	36.13	37.09
6-10-7 (lawn and garden)	1	6.58	10.10	7.29	35.80	37.67	79.00
6-12-6	76	6.06	12.10	6.14	37.20	37.65	37.21
10-0-10	9	9.50		10.20	36.00	35.71	38.89
10-6-4 (lawn and garden)	1	10.07	7.07		36.60	38.26	55.00
10-10-0	6	10.34	10.02		37.00	37.84	39.00
10-20-10	5	9.18	20.04	9.69	62.00	59.72	58.60
11-48-0	9	10.91	48.15		88.80	88.78	56.36
16-20-0	14	15.10	23.71		64.40	67.06	55.58
20.8% Ammonium Sulphate	3	20.81			49.92	49.95	48.00
Calcium Nitrate	1	15.12			36.00	36.29	44.60
21% Cyanamid, granular	6	21.03			50.40	50.46	40.17
HuActinite 5.5-2.0-0	1	4.77	3.85		15.80	16.46	25.00
Muriate of Potash 50%	1			44.70	60.00	53.64	70.00
Nitrate of Soda 16%	7	16.20			38.40	38.89	47.29
Raw Bone Meal	2	4.07	22.62*		26.48	27.86	34.00
Soft phosphate with colloidal clay, 22% total	1		21.88*		6.60	6.56	—
Sulphate of Ammonia 20%	24	20.03			48.00	48.06	45.03
Superphosphate 18%	11		19.70		23.40	25.62	24.13
Superphosphate 20%	22		20.93		26.00	27.20	24.20
Superphosphate 32%	3		34.13		41.60	44.37	41.70
Superphosphate 45%	2		41.81		58.50	54.36	53.60
Pulverized Sheep Manure	1	1.88	1.88	4.05	8.50	11.81	55.00

*Total Phosphoric Acid

Cost of Plant Food

Table 4 contains the calculated retail cost of a pound of nitrogen, of available phosphoric acid, and of potash, in cents per pound, as calculated from the cash selling prices per ton given in Table 3 and the guaranteed composition. For the purpose of these calculations it was assumed that the prices were in the same ratio as the valuations. As the price of the same fertilizer may be different in places, these figures are not correct for any particular locality, but represent averages only, and are for purposes of comparison. The prices were collected by the inspectors from retail merchants handling fertilizer. Grades used extensively near the factories might average a lower price than those used at a distance on account of lower transportation costs. The fertilizers with the lowest prices of plant food are given first in the table.

Fertilizers for lawns, gardens and flowers can be secured at a reasonable price but a few of the fertilizers in small packages are sold at a price of hundreds or even thousands of dollars per ton. The cost can be easily estimated from the price and the weight of fertilizer in the package.

Table 4. Approximate average cost of plant food in cents per pound.
Arranged in order of increasing cost 1939-40.

Grades	Nitrogen	Available Phosphoric Acid	Potash
11-48-0	7.62	4.13	
21% Cyanamid, granular	9.56		
16-20-0	10.36	5.61	
Superphosphate 45%		5.95	
Superphosphate 20%		6.05	
Sulphate of Ammonia 20%	11.26		
10-20-10	11.34	6.14	5.67
20.8% Ammonium Sulphate	11.54		
6-12-6	12.00	6.50	6.00
Superphosphate 32%		6.51	
Superphosphate 18%		6.70	
5-15-5	12.38	6.71	6.19
6-10-7	12.43	6.73	6.22
6-8-8	12.46	6.75	6.23
10-10-0	12.65	6.85	
4-8-10	12.74	6.90	6.37
4-12-4	12.82	6.94	6.41
5-15-0	12.95	7.01	
10-0-10	12.96		6.48
6-9-3	13.31	7.21	6.65
6-8-4	13.44	7.28	6.72
4-8-6	13.62	7.38	6.81
Muriate of Potash 50%			7.00
4-8-4	14.03	7.60	7.01
3-10-3	14.05	7.61	7.03
0-12-4		7.64	7.06
Nitrate of Soda 16%	14.78		
Calcium Nitrate	14.87		
3-10-0	15.20	8.24	
Raw Bone Meal	15.41	5.14*	
4-10-4	15.77	8.54	7.88
4-10-0	16.06	8.70	
10-6-4 (lawn and garden)	18.04	9.77	9.02
Activated sludge 5.5-2.0-0	18.98	10.28	
6-10-7 (lawn and garden)	26.48	14.35	13.24
4-12-4 (lawn and garden)	36.40	19.72	18.20
3-10-3 (lawn and garden)	40.33	21.85	20.17
3-4-11 (garden)	46.87	25.39	23.44
Pulverized Sheep Manure	77.65	42.06	38.83

*Total phosphoric acid.

Cost of Nitrogen. The 11-48-0 was the cheapest source of nitrogen, cyanamid was next, 16-20-0 third, sulphate of ammonia came fourth and 10-20-10 fifth. Pulverized sheep manure was the most expensive source of nitrogen, but is chiefly used for lawns or gardens. Of the farm fertilizers, 4-10-0 was the most expensive source of nitrogen, followed by raw bone meal, 3-10-0 and calcium nitrate as shown in Table 4. The cost of nitrogen is greater in most of the mixed fertilizers than in sulphate of ammonia or cyanamid because it costs to mix the fertilizers. The lowest-priced nitrogen in the mixed fertilizer was in the 11-48-0, followed in order by the 16-20-0, 10-20-10, 6-12-6, and 5-15-5. The 4-8-4, the most popular fertilizer, was also high in price. Nitrogen was lower in price than last season in some fertilizers and higher in others. The difference averaged .36 cents a pound higher for nitrogen, .09 cents less for that in 3-10-3, .07 cents less for that in 4-12-4, and .05 cents per pound less this year in 4-8-4.

Cost of Phosphoric Acid. The cheapest source of phosphoric acid was 11-48-0, then 16-20-0, followed by 45% superphosphate and then 20% superphosphate. The cost of available phosphoric acid was about 0.65 cents less per pound in 20 per cent superphosphate than in 18 per cent. Omitting the household fertilizers, phosphoric acid was most expensive in pulverized sheep manure, then in activated sludge, and then 4-10-0, and 3-10-0. Available phosphoric acid was .03 cents a pound lower in 4-8-4 than it was last season, and 0.04 cents a pound lower in 4-12-4 than last year.

Cost of potash. 10-20-10 furnished the cheapest potash, followed by 6-12-6 and then 5-15-5. Omitting the garden fertilizers, potash was the most expensive in pulverized sheep manure, followed by 4-10-4, 0-12-4 and then 3-10-3. Potash cost 3.30 cents a pound more in muriate of potash, than it did last season, but 0.03 cents a pound less in 4-8-4, and 0.03 cents a pound less in 4-12-4.

Relation of Cost to Concentration of Fertilizers

Certain fertilizers are sold which contain plant food in the same ratio so that, so far as nitrogen, phosphoric acid and potash are concerned, they are the same fertilizer except in concentration, or strength.

The ratio of plant food in the 4-12-4 and 5-15-5 fertilizers is exactly the same, as the proportions are three parts phosphoric acid to one of nitrogen and one of potash. The 3-10-3 fertilizer has practically the same ratio of 1-3-1. Table 5 shows the approximate cost of nearly equal quantities of plant food in these fertilizers at the average prices given in Table 3. One ton of 6-12-6 costs \$6.29 less than an equal quantity of plant food in 1 ½ tons of 4-8-4. The plant food in 1.25 tons of 4-12-4 costs \$1.38 more than an equal quantity in 5-15-5. The 1.67 tons of 3-10-3 cost \$7.73 more than the 1.0 tons of 5-15-5, but when an allowance of \$2.27 is made of the 33 pounds more phosphoric acid it contains, the plant food in 3-10-3 costs \$5.36 more. Similar differences are to be seen with the other grades. The most concentrated mixed fertilizer was the cheapest per pound of plant

Table 5. Relative cost of approximately the same amount of plant food in different grades of fertilizer.

Grade	Nitrogen pounds	Available Phosphoric acid pounds	Potash pounds	Total Cost
Group 1				
1.0 tons 6-12-6	120	240	120	\$37.20
1.5 tons 4-8-4	120	240	120	43.49
Group 2				
1.0 tons 5-15-5	100	300	100	38.69
1.25 tons 4-12-4	100	300	100	40.07
1.67 tons 3-10-3	100	333	100	46.42

food, or to put it another way, the highest priced fertilizer per ton may be the lowest priced per pound of plant food. This difference is caused partly by freight charges, partly by the cost of bagging, etc. The higher cost of manufacture of the more concentrated fertilizers is frequently more than offset by the cost of freight, bags, etc. As shown in Table 4, the cost of phosphoric acid averaged 0.65 cents a pound less in 20 per cent superphosphate than in 18 per cent.

Comparing Cost of Fertilizer

The relative money value of two or more kinds of fertilizer may be roughly compared by dividing the price at which the fertilizer is sold per ton by the valuation per ton of the fertilizer. While guaranteed valuations for many grades for the season of 1939-40 may be somewhat different from those published in this bulletin, the valuation here given may be used for comparative purposes. For example, if a 4-8-4 fertilizer sells for \$29.00 a ton and a 6-12-6 fertilizer for \$37.20, which is cheaper? Using the valuations from Table 3, for 4-8-4, the selling price, \$29.00, divided by the valuation, \$24.80, gives \$1.17; for 6-12-6, the selling price, \$37.00, divided by the valuation, \$37.20, gives \$1.00. Thus one dollar of valuation costs \$1.17 in 4-8-4, and \$1.00 in 6-12-6. Therefore, the 6-12-6 is cheaper. Similar calculations may be made for other grades and for other prices.

Of course the suitability of the fertilizer to the soil and crop must be considered in addition to the relative cost of the plant food.

Free Analyses

Purchasers of commercial fertilizers for their own use (but not for sale), can secure a free analysis of a sample provided they take a legal sample. Those who desire the free analysis of a sample of commercial fertilizer should write for a blank, "Application for Free Fertilizer Analysis", to the State Chemist, College Station, Texas, before taking a sample. The proper sampling of a fertilizer requires care, and the law requires it to be taken in a certain way so that a fair sample is taken. If the sample is not properly taken, it does not represent the fertilizer sampled, and the analysis may be better or poorer than the goods actually

are. This privilege of a free analysis applies only to fertilizers tagged, and sold under the fertilizer law and to samples properly taken so that they represent the goods sampled.

Analysis of Fertilizers, 1939-40

Samples of fertilizer were collected from the goods being sold in many towns and cities. The chief places of sales were visited several times. The number of samples registered for analysis was 1086.

Table 9, near the end of this Bulletin, contains a list of the samples of fertilizer subjected to analysis in the season ending September 1, 1940. Analysis below guarantee are brought out in heavy type. Practically all

Table 6. Average valuation of all fertilizers guaranteed and found in dollars per ton, 1939-40.

Manufacturer	Number Averaged	Valuation Guaranteed	Valuation Found	No. of samples more than 4 % below guarantee
American Cyanamid Company	11	\$59.13	\$59.78	0
Archer Grain Company	2	30.70	32.71	0
Arkansas Fertilizer Company	5	28.52	29.07	0
Armour Fertilizer Works	139	33.91	34.67	6
Blume System Tree Experts	1	23.80	28.11	0
Bryan Cotton Oil & Fertilizer Co.	14	28.37	29.92	2
Campbell Fertilizer Co.	36	28.79	31.98	0
Cherokee Fertilizer Company	3	32.60	31.59	0
Chilean Nitrate Sales Corporation	4	38.40	38.83	0
Consolidated Chemical Industries, Inc.	1	26.48	28.55	0
Crockett Fertilizer Works	14	28.64	29.11	0
Davison Chemical Corporation (Davison Pick Fertilizer Div.)	2	27.40	27.49	0
Dixie Chemical Company	4	30.90	31.92	0
East Texas Cotton Oil Co. (Palestine)	27	29.12	29.51	2
East Texas Cotton Oil Co. (Tyler)	30	28.89	30.28	0
Farmers Cotton Oil Company	11	29.76	30.22	0
Federal Chemical Company, Inc.	39	28.28	29.04	0
Fidelity Chemical Corporation	71	35.68	36.44	3
Ford Motor Company	3	49.92	49.95	0
Gilmer Cotton Oil & Fertilizer Co.	14	28.46	29.56	1
City of Houston Engineering Dept.	1	15.80	16.46	0
International Agricultural Corp.	38	29.48	29.91	0
Jacksonville Fertilizer Company	11	28.71	31.00	0
Kelly, Weber and Company, Inc.	23	25.69	26.65	0
Longview Cotton Oil Company	14	28.77	29.63	0
Marshall Cotton Oil Company	15	29.43	29.58	0
Mixson Brothers	10	31.04	31.29	0
Nicholson's Seed Store	2	33.30	35.28	0
Oil Mill and Fertilizer Works	15	29.28	28.99	3
Pate Brothers Fertilizer Works	12	26.18	27.60	0
Pittsburg Cotton Oil Company	15	29.44	29.54	1
Port Fertilizer Company	12	55.59	56.72	0
The Pulverized Manure Company	1	8.50	11.81	0
Shreveport Fertilizer Works	75	29.93	30.66	2
Soil Builders, Incorporated	1	6.60	6.56	0
Swift and Company Fertilizer Works.....	163	30.50	30.76	12
Synthetic Nitrogen Products Corp.	1	36.00	36.29	0
Temple Cotton Oil Company	7	33.11	32.27	1
Texas Farm Products Company	73	30.08	30.63	0
Tri-State Fertilizer and Lumber Co.	3	28.47	29.90	0
Tyler Fertilizer Company	18	29.61	30.03	2
United Chemical Company	78	29.27	28.95	16
Virginia Carolina Chemical Corp.	60	28.53	28.78	1
Waldo Fertilizer Works	2	35.80	37.41	0
Chas. F. Ward	2	28.70	40.65	0

samples of fertilizer were collected by our inspectors. Analyses and inspection were made by S. E. Asbury, T. L. Ogier, Waldo Walker, G. S. Shepard, Geo. Smith, Sam Greenberg, and Leon Miller.

Relation of Valuation Guaranteed to Valuation Delivered

Table 6 contains the average guaranteed valuation, and the average valuation found by our analyses, for all manufacturers doing business in Texas. In the preparation of this table, all analyses made were averaged, even though several were made of each brand and fertilizer materials are included as well as mixed fertilizers.

Averages Below Guarantee

Whenever any lot of fertilizer is 4 per cent or more below guarantee, the law requires all persons who have sold this lot of fertilizer to make good the deficiency to all purchasers. This rebate is paid by the manufacturer to the dealer and by the dealer to the customer. The number of lots on which rebates were paid by each manufacturer is shown in Table 6.

Fillers

Many mixed fertilizers are made by mixing together ammonium sulphate, superphosphate, potash salts, and other materials containing nitrogen, phosphoric acid and potash. It is possible to make such fertilizers entirely from fertilizing materials, but it is often more desirable and less expensive to make a mixture to the desired composition by the addition of sand, dolomite, or other material containing little or no fertilizing ingredients. Such additions are called fillers.

The materials used as filler in the grades of fertilizer offered for sale in Texas the past season included sand, limestone, lime, dolomite, pecan hulls, peanut hulls, gypsum, phosphate rock and coffee chaff.

Only small quantities of limestone or lime can be used because larger quantities will revert some of the available phosphoric acid to insoluble phosphoric acid, thereby decreasing the percentage of available phosphoric acid in the fertilizer and causing it to fall below guarantee.

Pecan hulls and peanut hulls contain very little plant food. The nitrogen is of low grade, and the use of low-grade material is prohibited by the Texas fertilizer law, except under special conditions. On account of misleading claims made last season regarding the value of peanut hulls and pecan hulls, their use will not be authorized this season.

Non-Acid Forming Fertilizers

Ordinary fertilizers when used for a number of years on soils with a low buffer capacity may acidify a neutral soil, or make an acid soil more acid, and so are termed acid-forming fertilizers. Non-acid forming fertilizers are made by the addition of sufficient amounts of ground dolomite

to neutralize the acidity, or by the selection of suitable fertilizing ingredients. Dolomite is a calcium-magnesium carbonate. Limestone is not suitable because large quantities revert the available phosphoric acid of the fertilizer and causes it to become insoluble. In the eastern part of the United States, where fertilizers have been used for a long time and where the soils are already acid, ordinary fertilizer may not give as good yields of crops as non-acid forming fertilizers. Non-acid forming fertilizers are recommended for use on acid soils having a pH of 5.5 or lower and which are likely to become still more acid with ordinary fertilizers. Since Texas soils are generally only slightly acid, or even alkaline, the use of non-acid forming fertilizers is not at present necessary, except under exceptional conditions. Where the soils are neutral or slightly alkaline, as is the case in large areas of limestone soils, ordinary fertilizers are preferable to non-acid forming fertilizers. Some plants require slightly acid soils for best results. An acid-forming fertilizer may be better on an alkaline soil than a non-acid forming fertilizer. For further information see Progress Report No. 594.

Only two brands of fertilizer sold in Texas this season were claimed to be non-acid forming. Examination was made of 24 samples, with the results given in Table 7.

Table 7. Analyses of fertilizers claimed to be non-acid forming

Laboratory Number	Name of Brand	Acid-Base balance	
64718	Swift's pH 7 6-8-4	16B	passed
64792	Swift's pH 7 6-8-4	7B	passed
64823	Swift's pH 7 6-8-4	9A	passed
64844	Swift's pH 7 6-8-4	14B	passed
64846	Swift's pH 7 6-8-4	15A	passed
64854	Swift's pH 7 6-8-4	50A	Sl. acid-forming
64857	Swift's K.O. Non Acid-Forming 6-8-8	11A	passed
64860	Swift's pH 7 6-8-4	103A	Sl. acid-forming
64868	Swift's pH 7 6-8-4	24A	passed
64877	Swift's pH 7 6-8-4	2B	passed
64894	Swift's K.O. Non Acid-Forming 6-8-8	12A	passed
64975	Swift's K.O. Non Acid-Forming 6-8-8	27B	passed
64992	Swift's pH 7 6-8-4	11A	passed
65037	Swift's K.O. Non Acid-Forming 6-8-8	12A	passed
65081	Swift's K.O. Non Acid-Forming 6-8-8	33A	passed
65083	Swift's pH 7 6-8-4	19A	passed
65097	Swift's pH 7 6-8-4	54A	Sl. acid-forming
65148	Swift's K.O. Non Acid-Forming 6-8-8	60A	Sl. acid-forming
65213	Swift's pH 7 6-8-4	19A	passed
65321	Swift's K.O. Non Acid-Forming 6-8-8	146A	acid forming
65373	Swift's K.O. Non Acid-Forming 6-8-8	25B	passed
65393	Swift's pH 7 6-8-4	40A	passed
65402	Swift's pH 7 6-8-4	4A	passed
65409	Swift's pH 7 6-8-4	25A	passed

Investigations Under the Fertilizer Law

The State Chemist is required by the fertilizer law to investigate the composition, properties, and agricultural values of fertilizers or fertilizer materials, or ingredients of fertilizer sold or offered for sale within the State of Texas, and to publish his results as he may find.

Relation to Experiment Station Work

The work of the State Chemist is closely related to the chemical work of the Experiment Station. In his capacity as Chief of the Division of Chemistry of the Experiment Station, the State Chemist is carrying out extensive investigations into the fundamental properties of soils, especially with respect to their content of plant food. This work is related closely to the use of fertilizers and is connected with investigations as to the agricultural values of fertilizers required by the Fertilizer Control, for fertilizers vary in effect upon the different soils.

Soft Phosphate With Colloidal Clay

Soft phosphate with colloidal clay is a natural phosphate of lime containing 20 per cent of total phosphoric acid or more. The phosphate of lime is so finely divided that some of it is termed colloidal. The availability to plants of the phosphoric acid of soft phosphate with colloidal clay is on an average about 40 per cent of that of the available phosphoric acid in 20 per cent superphosphate. Additional information is given in Bulletin 509.

Sulphur, Gypsum, Manganese, and Other Secondary Fertilizing Elements

Our present evidence indicates that manganese, magnesia, sulphur, calcium, boron, iodine, zinc or other secondary fertilizing elements are not needed as additions to Texas soils. Sulphur and calcium are present in large quantities in practically all mixed fertilizers, and small quantities of the other elements are also present. The quantities of sulphur and calcium in some Texas fertilizers is given in Table 8.

We are unable to recommend the use of sulphur or gypsum alone as a fertilizer to supply sulphur in Texas because Texas soils need nitrogen, phosphoric acid or potash much more than they need sulphur, and the sulphur or gypsum does not supply any of these plant foods. The experiments which have been carried out do not give results which justify the use of such materials alone as fertilizers (see Bulletins 408 and 414). This also applies to the natural mixture of sulphur, gypsum, sulphuric acid and other substances, which various parties and concerns have attempted to sell or exploit as a fertilizer or soil amendment. It is not recommended for use as a fertilizer and does not give results on soils which need fertilizer, as shown in Bulletins 408 and 414.

For plants which do best on an acid soil, sulphur is sometimes used to acidify soils that are alkaline or neutral. The organisms in the soil oxidize the sulphur to sulphuric acid and thus in turn acidifies the soil. The oxidation requires two or three months. The quantity to be used depends upon the buffer capacity of the soil for acid, and may range from a few hundred pounds to several thousand pounds per acre. In the latter case, acidification of spots is best. The value of a sulphur for acidifying the soil depends on the quantity of sulphur present: a material containing

Table 8. Sulphur and calcium in some grades of fertilizers.

Laboratory Number	Grade	Sulphur per cent	Calcium per cent
53639	Nitrate of soda .....	.16	.07
53697	4-8-4	8.14	10.64
53709	4-8-4	9.66	10.95
53724	4-8-4	9.10	10.68
53542	4-12-4	11.68	13.16
53565	4-12-4	11.02	13.82
53624	4-12-4	10.82	12.84
53695	4-12-4	12.06	14.60
53587	5-15-5	13.30	14.97
53603	5-15-5	12.94	15.03
53612	5-15-5	12.74	14.92
53648	5-15-5	12.84	14.97
53946	Soft phosphate with colloidal clay .....	.18	17.20
54044	6-8-8	8.62	11.96
54430	6-8-8	8.30	12.02
54452	6-8-8	8.42	11.66
54567	20 percent kainit	4.08	5.35
53767	6-9-3	12.04	10.85
53838	6-9-3	8.98	13.39
53897	6-9-3	10.38	20.98
54524	Tankage .....	.16	18.10
53592	6-10-7	12.94	11.24
53607	6-10-7	12.52	11.17
53649	6-10-7	12.28	12.48
53539	10-20-10	11.24	6.81
53593	10-20-10	10.30	5.54
53608	10-20-10	10.92	7.65
53642	10-20-10	8.68	8.67
53486	11-48-0	2.12	1.55
53499	11-48-0	1.50	6.14
53638	11-48-0	2.50	1.47
53670	11-48-0	2.40	1.42
53492	16-20-0	14.62	2.09
53527	16-20-0	14.54	3.57
53645	16-20-0	11.86	4.34
53668	15% calcium nitrate .....	.04	20.63
53561	18% superphosphate	12.06	20.78
53751	18% superphosphate	11.50	20.05
53833	18% superphosphate	12.00	20.08
53917	18% superphosphate	11.60	20.51
53530	20% superphosphate	12.52	21.94
53664	20% superphosphate	12.50	22.36
53776	20% superphosphate	12.46	22.16
53883	20% superphosphate	12.60	20.55
53529	32% superphosphate	7.90	18.21
53636	32% superphosphate	8.00	18.91
53661	32% superphosphate	8.04	17.79
53669	21% cyanamid .....	.36	41.20

85 per cent of sulphur is $4 \frac{1}{4}$ times as strong as one containing only 20 per cent of sulphur and one containing 99 per cent sulphur is 14 per cent stronger than one which contains 85 per cent.

On some limestone soils plants suffer from a yellowing of the leaves, known as chlorosis, usually due to deficiency of iron. The presence of carbonate of lime prevents the plant from taking up (or utilizing) sufficient iron. Most of these soils contain such large quantities of carbonate of lime that broadcast applications of sulphur are soon neutralized and made useless. A sufficient number of acidified spots may prevent the chlorosis. The acidified spots may be made by digging post holes to depths of 2 to 3 feet, mixing the dirt with sulphur and returning the mixture to the holes. Holes may also be made with a pointed iron rod and filled with the sulphur. A sulphur compost may also be used, as recommended by Godfrey in Progress Report No. 675.

Investigations on the use of manganese sulphate for Texas soils are given in Bulletin 432. The results of the experimental work do not justify recommendation of the use of manganese sulphate on Texas soils.

Greensand

A report of investigations regarding the value of greensand as a fertilizer was published in Bulletin 428. The availability of the potash and phosphoric acid in greensand was found to be low. Greensand has little fertilizing value but can be used in quantities of 5 to 40 tons to an acre on land near to the deposits where it can be mined and applied at a cost closely related to its value. It does not contain sufficient fertilizer value to justify attempting to market it.

Polyhalite and Sewage Sludge

Polyhalite, a mineral found in deep deposits in western Texas and in New Mexico, contains about 12 per cent potash, which is only partly soluble in water, but which is readily available to plants. Additional information is given in Bulletin 449.

Digested sewage sludge is low in plant food, and the nitrogen has a low availability. Dried activated sludge contains about 5 per cent nitrogen and 2 per cent available phosphoric acid and the nitrogen has a good availability to plants. Additional information is given in Bulletin 445.

Fertilizing Value of Spent Phosphate Catalyst

A catalyst containing phosphoric acid is used in the manufacture of gasoline from petroleum. Several hundred tons of the spent phosphate catalyst may accumulate at a manufacturing point during the course of

a year, and the question arose as to its suitability for use as a fertilizer. Chemical analyses and pot experiments were made to secure the necessary information.

When fresh, it contains from 40 to 54% available phosphoric acid (P_2O_5) and about 58% insoluble material (silica). The weathered catalyst may contain only 24% phosphoric acid. It is acidic, having an acid-base balance equal to 561 to 836 pounds of calcium carbonate per ton. Ignition with magnesium nitrate gives correct results for total phosphoric acid, but solution in acids gives results which may be 10% too low. The percentage of the phosphoric acid taken up by corn and kafir in eight tests on four soils was nearly as high as from superphosphate. The phosphoric acid of spent phosphate catalyst has a high order of availability to plants, being much like that of superphosphate.

Vitamin B₁

Vitamin B₁ (thiamin hydrochloride) is now an ingredient of some garden fertilizers and is sold alone in such a way as to bring it under the Texas fertilizer law. Extravagant claims had to be revised.

Vitamin B₁ appears to promote the growth of roots and may be of advantage at the time plants are transplanted and also to plants of slow growth. Vitamin B₁ does not and cannot take the place of mineral fertilizers essential to plant growth. If the soil does not contain sufficient plant food, fertilizers are needed whether vitamin B₁ is supplied or not.

All plants produce vitamin B₁ in their leaves and in their roots. Many plants, especially wheat, corn, tomatoes, peas, beans, etc., produce sufficient vitamin B₁ to supply all needs. A few slow growing plants do not produce sufficient quantities of vitamin B₁ and additions of vitamin B₁ to the soil may increase the growth of such plants.

Slow growing plants, which would otherwise respond to vitamin B₁ may not respond in rich soils, well supplied with animal manures or decaying vegetable matter because such manures supply vitamin B₁.

The application of vitamin B₁ in the growing of plants probably has a definite field of usefulness, but its use is still in the experimental stage. Those who wish to experiment with it should apply it to five or more plants, and not apply it to five or more similar plants growing under the same conditions. Unless some such comparison is made, it is not possible to tell whether or not the vitamin B₁ is effective.

Fertilizers for Water Culture

Soluble fertilizers, intended for use in water culture, are now being sold. Water culture is the growing of plants in a water solution that contains all the necessary elements for proper plant growth. There is nothing

either new or miraculous about growing plants in water, as it has been done for a hundred years. What is new is the commercial application of water-culture methods.

The soil supplies plants with necessary elements, can be easily fertilized, and the soil helps to regulate the supply of plant food to the plant. The elements which must be added to the water in which the plants are to be grown include nitrogen, potassium, calcium, magnesium, sulphur, iron, manganese, boron, zinc and copper. The solution must have the proper acidity, which requires adjustment from time to time. The plants must be properly supported. Once the plants begin to grow, the questions of suitable quantities of light, correct temperature, heat, as well as protecting from pests and diseases must be met. Keeping the solution well balanced in necessary elements is important and not always easy. All plants do not use the same quantities of the elements, consequently as one is absorbed freely by certain plants there may be an excess of another.

Growing plants in water culture is in the experimental stage. For some crops the method is entirely too expensive, for other crops, the yield will be just as large when grown in soil. For anyone who wishes to experiment with water culture, there are several books describing the technique in detail, which can be purchased from a good bookstore.

Information Concerning the Use of Fertilizer

Information concerning the use of commercial fertilizer for various crops in different sections of Texas is given in Circular 85, and this will be sent free on request. Some publications of the Texas Experiment Station giving information on fertilizers and fertilizing material are as follows:

Circular 85—Use of commercial fertilizers.

Bulletin 167—Commercial fertilizers and their use.

Bulletin 350—Fertilizer statistics for Texas (to 1927).

Bulletin 398—Fertilizers for rice in Texas.

Bulletin 414—Possibilities of sulphur as a soil amendment.

Bulletin 428—The fertilizing value of greensand.

Bulletin 432—Manganese in Texas soils and its relation to crops.

Bulletin 445—The composition and fertilizing value of sewage sludge.

Bulletin 469—Fertilizer experiments with cotton.

Bulletin 509—Availability of the phosphoric acid of finely divided rock phosphate.

Bulletin 572—Fertilizer statistics for Texas, 1926-1938.

Progress report 594—Non-acid forming fertilizers.

Progress report 675—Acid production in compost of sulphur and organic matter.

Any of these publications will be sent free on request to the Director of the Experiment Station, College Station, Texas. In order to avoid errors, both the name and the number should be given.

Summary

This Bulletin contains a report of the Texas Fertilizer Control for 1939-40 and definitions of fertilizer terms as adopted by the Association of Official Agricultural Chemists.

An explanation of terms is given.

Sales of fertilizer in Texas were 116,307 tons in 1939-40. They were 93,115 tons in 1938-39. The tonnage for other years is given. The tons reported do not include cottonseed meal sold as a feed but used as a fertilizer.

The average selling prices and composition of the different kinds of fertilizer are given.

Available phosphoric acid costs slightly less in 20 per cent superphosphate than in 18 per cent.

Plant food costs less per pound in the more concentrated fertilizers than in less concentrated fertilizer, though the former costs more per ton.

The grades of fertilizer to be sold next season are given.

A table is given showing the relation of the guaranteed valuation to the valuation delivered by the various manufacturers.

Analysis of 1086 samples collected by the inspector are given.

Table 9. Analysis of commercial fertilizer, season 1939-40

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
American Cyanamid Company, New York, New York					
	21% 'Aero' Cyanamid Granular Guarantee	21.00			\$50.40
64734	Analysis	20.98			50.35
64735	Analysis	20.91			50.18
64748	Analysis	21.02			50.45
64750	Analysis	21.00			50.40
64816	Analysis	21.14			50.74
64935	Analysis	21.10			50.64
	'Ammo-Phos' 11-48-0 Guarantee	11.00	48.00		88.80
64729	Analysis	11.04	48.04		88.95
64742	Analysis	11.20	48.17		89.50
	'Ammo-Phos' 16-20-0 Guarantee	16.00	20.00		64.40
64730	Analysis	16.12	21.62		66.80
64741	Analysis	16.26	21.18		66.55
	Granular 'Aero' 32% Superphosphate Guarantee.....		32.00		41.60
64873	Analysis		33.07		42.99
Archer Grain Company, Houston, Texas					
	Archer's Vitalife Acid Plant Foods Guarantee	3.00	4.00	11.00	25.60
65261	Analysis	2.90	4.24	12.73	27.75
	Archer's Vitalife St. Augustine Grass Plant Foods Guarantee	6.00	10.00	7.00	35.80
65325	Analysis	6.58	10.10	7.29	37.67
Arkansas Fertilizer Company, Little Rock Arkansas					
	White Diamond Brand Fertilizer Crop Getter Guarantee	4.00	12.00	4.00	30.00
65355	Analysis	4.09	12.25	4.32	30.93
	White Diamond Brand Fertilizer Jack Rabbit Guarantee	4.00	8.00	6.00	27.20
65354	Analysis	4.18	8.16	4.97	26.60
	White Diamond Brand Fertilizer Old Reliable Guarantee	4.00	8.00	4.00	24.80
65356	Analysis	4.16	8.03	4.20	25.45
65371	Analysis	4.44	8.97	3.73	26.80
	White Diamond Brand Fertilizer Pioneer Guarantee	6.00	10.00	7.00	35.80
65370	Analysis	5.84	10.53	6.56	35.58
Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, Louisiana					
	Armour's Big Crop Fertilizer 3-10-3 Guarantee....	3.00	10.00	3.00	23.80
64836	Analysis	2.96	10.13	.43	20.79
64938	Analysis	3.04	11.16	3.03	25.45
65239	Analysis	2.93	10.52	3.24	24.60
	Armour's Big Crop Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	24.80
64797	Analysis	3.40	9.88	3.17	24.80
64806	Analysis	3.98	8.90	3.95	25.86
65007	Analysis	4.31	7.63	4.05	25.12
65008	Analysis	3.76	9.74	3.42	25.78
65146	Analysis	4.04	7.67	4.09	24.58
65290	Analysis	4.02	8.19	3.73	24.78
65369	Analysis	4.02	8.20	3.78	24.85
65391	Analysis	4.04	8.20	4.04	25.21
65397	Analysis	4.06	8.18	3.87	25.01
65501	Analysis	4.22	8.02	4.05	25.42
65625	Analysis	4.15	8.37	4.08	25.74
	Armour's Big Crop Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	27.20
64802	Analysis	4.18	9.30	5.79	29.07
64810	Analysis	3.84	8.83	6.23	28.18
64815	Analysis	3.95	10.00	6.69	30.51
64905	Analysis	3.94	8.16	5.85	27.09
64953	Analysis	3.96	8.01	6.08	27.21
64970	Analysis	3.62	7.92	6.06	26.26
65006	Analysis	4.00	8.05	6.04	27.32
65086	Analysis	4.12	8.13	6.20	27.90
65092	Analysis	4.01	8.71	6.21	28.39
65145	Analysis	4.09	8.24	4.74	26.22
65240	Analysis	4.00	8.28	6.26	27.87

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, Louisiana—Continued.					
Armour's Big Crop Fertilizer 4-8-6 Guarantee— Continued—					
65263	Analysis	3.70	8.60	6.39	27.73
65381	Analysis	3.86	8.43	6.36	27.85
65390	Analysis	4.04	9.11	5.45	28.08
65437	Analysis	4.03	8.49	6.03	27.95
65452	Analysis	4.01	8.24	6.06	27.60
65550	Analysis	3.89	8.36	5.87	27.25
Armour's Big Crop Fertilizer 4-8-10 Guarantee					
64708	Analysis	4.00	8.00	10.00	32.00
64814	Analysis	3.95	9.99	9.22	33.53
64973	Analysis	3.84	9.87	11.63	36.01
Armour's Big Crop Fertilizer 4-10-0 Guarantee					
65251	Analysis	4.00	10.00		22.60
Armour's Big Crop Fertilizer 4-12-4 Guarantee					
64798	Analysis	3.74	10.69		22.88
64907	Analysis	4.00	12.00	4.00	30.00
65018	Analysis	3.87	12.56	4.20	30.66
65019	Analysis	3.96	11.89	3.89	29.63
65113	Analysis	4.08	12.24	4.04	30.55
65140	Analysis	4.00	12.15	4.07	30.28
65188	Analysis	4.13	12.37	4.09	30.90
65262	Analysis	4.03	12.19	4.08	30.42
65337	Analysis	3.96	12.06	4.02	30.00
65383	Analysis	4.01	12.25	4.06	30.42
Armour's Big Crop Fertilizer 5-15-0 Guarantee					
64714	Analysis	4.04	12.45	3.84	30.50
64864	Analysis	4.07	12.38	4.04	30.71
Armour's Big Crop Fertilizer 5-15-5 Guarantee					
64696	Analysis	5.00	15.00		31.50
64705	Analysis	5.00	16.44		33.37
64769	Analysis	4.57	14.88		30.31
64772	Analysis	5.00	15.00	5.00	37.50
64796	Analysis	4.92	15.02	5.03	37.38
64863	Analysis	4.96	15.36	5.42	38.37
64872	Analysis	5.64	15.05	4.75	38.81
Armour's Big Crop Fertilizer 6-8-4 Guarantee					
64707	Analysis	4.85	17.32	5.15	40.34
65406	Analysis	5.00	16.52	5.01	39.49
65738	Analysis	5.08	15.52	5.19	38.60
Armour's Big Crop Fertilizer 6-8-8 Guarantee					
64709	Analysis	5.19	16.88	5.16	40.59
64972	Analysis	6.00	8.00	4.00	29.60
65036	Analysis	5.72	9.88	4.31	31.74
Armour's Big Crop Fertilizer 6-10-7 Guarantee					
64695	Analysis	6.00	8.56	4.05	30.39
64706	Analysis	5.62	8.74	3.71	29.30
64825	Analysis	6.00	8.00	8.00	34.40
64833	Analysis	5.53	9.34	8.15	35.19
64903	Analysis	6.25	8.27	7.65	34.93
64906	Analysis	5.71	8.43	7.82	34.04
64969	Analysis	6.00	10.00	7.00	35.80
65035	Analysis	5.90	10.89	7.14	36.89
Armour's Big Crop Fertilizer 6-12-6 Guarantee					
64721	Analysis	6.02	11.02	7.23	37.46
64725	Analysis	6.05	10.38	7.23	36.69
64793	Analysis	6.13	10.23	7.24	36.70
64805	Analysis	5.69	10.50	6.34	34.92
64832	Analysis	5.89	10.43	6.90	35.98
64834	Analysis	6.08	9.38	7.04	35.23
64893	Analysis	6.02	10.15	7.04	36.10
Armour's Big Crop Fertilizer 6-12-6 Guarantee					
64721	Analysis	6.00	12.00	6.00	37.20
64725	Analysis	6.02	12.80	6.26	38.60
64793	Analysis	5.94	12.77	6.02	38.08
64805	Analysis	5.97	12.49	6.09	37.88
64832	Analysis	5.83	12.79	6.02	37.84
64834	Analysis	6.18	12.73	6.24	38.87
64893	Analysis	5.98	12.77	5.84	37.96
	Analysis	6.04	12.63	6.17	38.32

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	valuation found, per ton
Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, Louisiana—Continued.					
	Armour's Big Crop Fertilizer 6-12-6 Guarantee—				
64939	Analysis	5.78	12.59	5.58	36.94
65009	Analysis	6.35	11.97	5.89	37.87
65034	Analysis	6.04	12.68	6.17	38.38
65094	Analysis	6.14	12.53	6.06	38.30
65147	Analysis	5.99	12.29	6.01	37.57
65174	Analysis	6.05	12.62	6.17	38.33
65264	Analysis	6.07	11.77	5.87	36.91
65577	Analysis	6.05	12.89	5.67	38.08
	Armour's Big Crop Fertilizer 10-0-10 Guarantee	10.00		10.00	36.00
65736	Analysis	10.25		10.05	36.66
	Armour's Big Crop 10-20-10 Guarantee	10.00	20.00	10.00	62.00
64694	Analysis	9.05	19.75	10.13	59.56
64794	Analysis	8.87	19.43	10.07	58.63
	Armour's Big Crop Fertilizer 11-48-0 Guarantee	11.00	48.00		88.80
64693	Analysis	11.06	49.98		91.51
64719	Analysis	10.56	49.07		89.13
64726	Analysis	11.08	48.89		90.15
	Armour's Big Crop Fertilizer 16-20-0 Guarantee	16.00	20.00		64.40
64720	Analysis	15.03	27.45		71.76
64727	Analysis	15.43	26.56		71.56
64762	Analysis	15.39	24.96		69.39
64770	Analysis	15.43	26.70		71.74
64795	Analysis	16.11	22.92		68.46
	Armour's Big Crop Fertilizer Old Black Joe Guarantee	4.00	8.00	4.00	24.80
64799	Analysis	3.93	8.31	3.86	24.86
64801	Analysis	4.08	8.91	4.06	26.24
64813	Analysis	4.25	9.59	3.79	27.22
64827	Analysis	3.74	8.08	4.18	24.50
64904	Analysis	3.95	8.31	3.88	24.94
64936	Analysis	4.17	8.22	4.24	25.79
64952	Analysis	4.27	7.71	4.13	25.23
65010	Analysis	4.15	8.09	3.87	25.12
65017	Analysis	4.12	8.36	4.07	25.64
65095	Analysis	4.32	8.10	4.06	25.77
65121	Analysis	4.23	8.31	4.06	25.82
65139	Analysis	3.96	8.42	3.84	25.06
65187	Analysis	4.05	8.59	4.09	25.80
65363	Analysis	4.04	8.53	4.01	25.60
65368	Analysis	4.22	8.52	3.89	25.88
65396	Analysis	4.02	8.51	3.74	25.20
65419	Analysis	4.19	8.70	3.94	26.10
65440	Analysis	4.26	8.36	3.84	25.70
65521	Analysis	3.97	8.58	3.84	25.29
65570	Analysis	4.11	9.63	3.78	26.92
65588	Analysis	3.98	8.88	3.78	25.63
65624	Analysis	4.40	8.46	3.83	26.16
65665	Analysis	4.34	9.64	3.86	27.58
65693	Analysis	4.08	8.42	3.88	25.40
65737	Analysis	4.13	8.10	3.65	24.82
	Armour's Big Crop Nitrate of Soda 16% Guarantee.....	16.00			38.40
64698	Analysis	16.28			39.07
	Armour's Big Crop Raw Bone Meal Guarantee	3.70	22.00*		26.48
65691	Analysis	3.86	22.39*		27.17
	Armour's Big Crop Sulphate of Ammonia 20% Guarantee	20.00			48.00
64756	Analysis	19.68			47.23
64761	Analysis	18.89			45.34
64771	Analysis	17.93			43.03
64773	Analysis	19.15			45.96
64777	Analysis	19.50			46.80

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, Louisiana—Continued.					
Armour's Big Crop Sulphat of Ammonia 20% Guarantee—Continued—					
64867	Analysis	20.81			49.94
64870	Analysis	20.68			49.63
64886	Analysis	20.56			49.34
64892	Analysis	17.98			43.15
65227	Analysis	20.64			49.54
	Armour's Big Crop Superphosphate 18% Guarantee...		18.00		23.40
64697	Analysis		20.34		26.44
64835	Analysis		19.05		24.77
	Armour's Big Crop Superphosphate 20% Guarantee...		20.00		26.00
64717	Analysis		19.65		25.55
64937	Analysis		19.69		25.60
65141	Analysis		20.17		26.22
	Armour's Dirt Farmer Fertilizer 4-10-0 Guarantee ...	4.00	10.00		22.60
65690	Analysis	4.15	10.26		23.30
	Armour's Garden Fertilizer	4.00	12.00	4.00	30.00
64699	Analysis	3.96	13.24	4.04	31.56
	Armour's Plow Brand Fertilizer 6-10-7 Guarantee ...	6.00	10.00	7.00	35.80
65027	Analysis	6.15	9.93	7.07	36.15
Blume System Tree Experts, Houston, Texas					
	Blume Plant Special Guarantee	3.00	10.00	3.00	23.80
64888	Analysis	4.01	11.00	3.49	28.11
Bryan Cotton Oil & Fertilizer Company, Bryan, Texas					
	Star Brand Cotton & Corn Fertilizer Guarantee	3.00	10.00	3.00	23.80
64933	Analysis	4.69	7.74	4.32	26.50
65228	Analysis	3.66	10.59	4.38	27.81
65557	Analysis	3.62	9.24	4.07	25.58
	Star Brand Special Fertilizer Guarantee	4.00	12.00	4.00	30.00
64931	Analysis	3.94	9.97	4.46	27.77
65229	Analysis	4.26	12.46	4.38	31.68
65558	Analysis	3.85	12.58	4.24	30.68
	Star Brand 20% Superphosphate Guarantee		20.00		26.00
64932	Analysis		20.78		27.01
	Star Brand Tomato Fertilizer Guarantee	6.00	12.00	6.00	37.20
64930	Analysis	5.80	11.16	6.52	36.25
65231	Analysis	6.37	11.93	7.55	39.86
65556	Analysis	6.55	9.36	5.84	34.90
	Star Brand Truck Fertilizer Guarantee	4.00	8.00	4.00	24.80
64934	Analysis	4.18	8.53	4.09	26.03
65230	Analysis	4.19	8.96	4.08	26.61
65559	Analysis	4.64	8.47	4.50	27.55
Cambell Fertilizer Company, Houston, Texas					
	All-Weather-Organic Base Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	23.80
64882	Analysis	2.91	11.46	4.30	27.04
65226	Analysis	3.04	12.16	2.31	25.88
65267	Analysis	3.42	17.02	5.17	36.54
65300	Analysis	3.02	11.87	4.08	27.58
65703	Analysis	3.23	12.61	3.67	28.54
	All-Weather-Organic Base Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
64880	Analysis	4.02	8.90	4.85	27.04
65221	Analysis	4.00	8.25	4.14	25.30
65249	Analysis	4.16	8.50	4.39	26.30
65299	Analysis	4.37	8.28	5.18	27.47
65689	Analysis	4.02	9.25	4.71	27.33
	All-Weather-Organic Base Fertilizer 4-8-6 Guarantee ..	4.00	8.00	6.00	27.20
64783	Analysis	3.74	10.07	6.19	29.50
64879	Analysis	3.79	9.20	6.29	28.61
64891	Analysis	3.99	9.98	6.57	30.43
65220	Analysis	4.01	10.98	6.37	31.53
65258	Analysis	3.65	11.44	6.83	31.83
65260	Analysis	4.00	10.91	7.05	32.24

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Campbell Fertilizer Company, Houston, Texas—Continued.					
65269	Analysis	3.92	11.01	5.73	30.60
	All-Weather-Organic Base Fertilizer 4-8-10 Guarantee	4.00	8.00	10.00	32.00
64897	Analysis	4.13	9.02	10.30	34.00
65257	Analysis	4.03	11.03	10.32	36.39
	All-Weather-Organic Base Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	30.00
64881	Analysis	3.59	14.65	4.12	32.61
65250	Analysis	3.83	14.59	5.63	34.92
65268	Analysis	3.40	16.15	2.91	32.65
	All-Weather-Organic Base Fertilizer 5-15-5 Guarantee	5.00	15.00	5.00	37.50
64831	Analysis	4.33	19.85	5.03	42.24
64842	Analysis	5.04	18.66	5.08	42.46
	All-Weather-Organic Base Fertilizer 6-8-4 Guarantee	6.00	8.00	4.00	29.60
64840	Analysis	6.60	8.89	4.31	32.57
	All-Weather-Organic Base Fertilizer 6-10-7 Guarantee	6.00	10.00	7.00	35.80
64896	Analysis	6.74	11.56	7.77	40.53
	All-Weather-Organic Base Fertilizer 6-12-6 Guarantee	6.00	12.00	6.00	37.20
64782	Analysis	6.04	12.23	6.30	37.96
64790	Analysis	5.94	13.10	6.64	39.26
64830	Analysis	5.32	16.05	6.10	40.96
64841	Analysis	6.51	12.69	7.24	40.81
64883	Analysis	5.43	13.57	6.80	38.83
65225	Analysis	5.73	16.71	5.81	42.44
	4-10-0 All-Weather Rice Fertilizer with Bone Meal Guarantee	4.00	10.00		22.60
65688	Analysis	4.25	9.00		21.90
65702	Analysis	4.11	9.33		21.99
	3-10-0 All-Weather Rice Special Fertilizer Guarantee	3.00	10.00		20.20
65266	Analysis	2.67	12.70		22.92
65282	Analysis	2.88	11.57		21.95
Cherokee Fertilizer Company, Jacksonville, Texas					
	Chief Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65096	Analysis	4.21	7.52	3.87	24.52
	Chief Brand 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
65109	Analysis	6.32	9.72	6.40	35.49
	Chief Brand 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
65080	Analysis	5.67	10.64	6.11	34.77
Chilean Nitrate Sales Corporation, New York, New York					
	Champion Brand Chilean 16% Nitrate of Soda Guarantee	16.00			38.40
64710	Analysis	16.29			39.10
64728	Analysis	16.17			38.81
64763	Analysis	16.17			38.81
64764	Analysis	16.08			38.59
Consolidated Chemical Industries, Inc., Houston, Texas					
	"T.C.C." Brand Raw Bone Meal Guarantee	3.70	22.00*		26.48
65687	Analysis	4.28	22.85*		28.55
Crockett Fertilizer Works, Crockett, Texas					
	Crescent 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	23.80
65110	Analysis	3.22	9.75	3.77	24.93
65632	Analysis	3.20	9.75	3.80	24.92
	Crescent 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65182	Analysis	4.10	8.00	4.15	25.22
65209	Analysis	3.97	7.54	4.12	24.27
65218	Analysis	3.85	8.22	4.55	25.39
65524	Analysis	3.91	7.53	4.36	24.40
65640	Analysis	4.07	8.48	4.11	25.72
65663	Analysis	3.95	8.49	4.15	25.50
	Crescent 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
65255	Analysis	4.01	11.72	4.37	30.10
65662	Analysis	3.94	11.91	4.10	29.86

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, Nitrogen	Potash, per cent	Valuation found, per ton
Crockett Fertilizer Works, Crockett, Texas—Continued.					
	Crescent 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
65133	Analysis	6.02	10.04	7.20	36.14
65523	Analysis	5.90	9.78	6.39	34.54
65664	Analysis	6.35	10.01	7.61	37.38
	Crescent 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
65134	Analysis	5.87	12.22	7.70	39.22
Davison Chemical Corporation (Davison-Pick Fertilizer Division), New Orleans, Louisiana					
	Bull Dog Special 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65271	Analysis	3.86	8.26	4.08	24.90
	Bull Dog Special 4-12-4 Guarantee	4.00	12.00	4.00	30.00
65272	Analysis	4.07	11.67	4.28	30.08
*Total phosphoric acid					
Dixie Chemical Company, Sulphur Springs, Texas					
	Dixie 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65434	Analysis	4.00	8.31	4.19	25.43
	Dixie 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
65462	Analysis	4.39	8.47	6.18	28.97
	Dixie 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
64951	Analysis	6.24	10.22	6.75	36.37
65433	Analysis	6.27	10.34	7.01	36.90
East Texas Cotton Oil Company, Palestine, Texas					
	Palestine Blue Star 4-12-4 Guarantee	4.00	12.00	4.00	30.00
65059	Analysis	4.17	12.27	4.05	30.82
65126	Analysis	4.16	12.49	4.15	31.20
65173	Analysis	4.11	12.62	4.04	31.12
65179	Analysis	4.24	11.70	3.54	29.64
65212	Analysis	4.20	12.84	4.19	31.15
65490	Analysis	4.34	10.89	4.44	29.91
65669	Analysis	4.06	11.48	4.12	29.60
65673	Analysis	4.23	11.41	4.10	29.90
	Palestine Blue Star 6-8-4 Guarantee	6.00	8.00	4.00	29.60
65177	Analysis	5.73	9.01	3.77	29.98
	Palestine Blue Star 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
65129	Analysis	6.10	10.14	7.06	36.29
65202	Analysis	6.17	10.14	7.27	36.71
65492	Analysis	6.22	9.81	7.37	36.52
	Palestine Blue Star 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
65190	Analysis	5.45	12.00	6.29	36.23
65670	Analysis	6.04	11.79	6.90	38.11
	Palestine Blue Star Brand 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	23.80
65127	Analysis	3.12	10.21	2.72	24.02
65242	Analysis	3.04	10.40	3.21	24.67
	Palestine Blue Star Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65130	Analysis	4.30	7.28	4.31	24.95
65241	Analysis	4.16	8.18	4.09	25.52
65254	Analysis	4.33	8.35	4.24	26.34
	Palestine Blue Star Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
65191	Analysis	4.16	7.78	6.27	27.61
	Palestine Blue Star Brand 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	29.70
65128	Analysis	6.40	8.19	3.07	29.57
65488	Analysis	6.01	7.20	3.54	28.03
	Palestine Blue Star Brand 18% Superphosphate Guarantee		18.00		23.40
65489	Analysis		19.74		25.66
	Palestine Blue Star Brand 20% Superphosphate Guarantee		20.00		26.00
65189	Analysis		21.53		27.99
	Palestine Tomato Special Guarantee	4.00	8.00	6.00	27.20
65533	Analysis	4.29	8.03	6.64	28.71

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
East Texas Cotton Oil Company, Palestine, Texas—					
—Continued.					
	Palestine Upland Cotton Guarantee	4.00	8.00	4.00	24.80
65491	Analysis	4.14	7.58	4.17	24.79
65649	Analysis	3.86	5.93	3.93	21.69
East Texas Cotton Oil Company, Tyler, Texas					
	ETCO 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	23.80
65069	Analysis	3.05	10.49	3.73	25.44
	ETCO 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65516	Analysis	4.22	8.12	4.14	25.66
	ETCO 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
65052	Analysis	4.20	8.14	6.77	28.78
	ETCO 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
65608	Analysis	4.39	12.25	4.18	31.49
	ETCO 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	29.70
65726	Analysis	6.03	9.16	4.94	32.31
	ETCO 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
65055	Analysis	6.25	10.47	7.01	37.02
65567	Analysis	6.00	11.20	5.50	35.56
	ETCO 10-0-10 Fertilizer Guarantee	10.00		10.00	36.00
65547	Analysis	9.21		11.11	35.43
65609	Analysis	8.83		12.45	36.13
	ETCO 20 Per Cent Superphosphate Guarantee		20.00		26.00
65572	Analysis		21.78		28.31
	Goldenrod 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65053	Analysis	4.08	8.00	4.78	25.93
	Goldenrod 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
65729	Analysis	4.41	8.40	7.10	30.02
	Goldenrod 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
65546	Analysis	4.21	12.58	4.41	31.74
65605	Analysis	4.69	12.46	3.82	32.04
65730	Analysis	4.83	11.83	4.43	32.29
	Goldenrod 6-8-4 Fertilizer Guarantee	6.00	8.00	4.00	29.60
65548	Analysis	6.17	7.52	5.39	31.06
	Goldenrod 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
65544	Analysis	6.08	10.24	7.56	36.97
65727	Analysis	6.21	11.01	6.67	37.22
	Goldenrod Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
65728	Analysis	3.95	8.00	4.83	25.68
	Goldenrod Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
65056	Analysis	4.00	8.01	6.18	27.43
65543	Analysis	3.79	8.50	7.38	29.01
65583	Analysis	4.06	8.29	6.91	28.81
65641	Analysis	4.17	8.40	6.12	28.27
	Goldenrod Brand 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
65054	Analysis	4.05	12.22	4.77	31.33
	Goldenrod Brand 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	29.70
65499	Analysis	5.58	9.95	3.09	30.04
	Goldenrod 18 Per Cent Superphosphate Guarantee		18.00		23.40
65587	Analysis		20.00		26.00
	Goldenrod 20 Per Cent Superphosphate Guarantee		20.00		26.00
65102	Analysis		21.78		28.31
65549	Analysis		21.82		28.37
	Goldenrod Potato Producer Guarantee	4.00	8.00	4.00	24.80
65545	Analysis	4.26	8.38	3.91	25.80
65606	Analysis	4.25	8.35	4.05	25.92
Farmers Cotton Oil Company, Winnsboro, Texas					
	Farmer's Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65959	Analysis	4.28	8.57	4.08	26.31
65591	Analysis	4.20	7.26	4.14	24.49
	Farmer's Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	27.20
64961	Analysis	4.29	8.19	6.18	28.36
65589	Analysis	4.23	7.23	6.65	27.53

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Farmer's Cotton Oil Company, Winnsboro, Texas—					
—Continued.					
Farmer's Fertilizer 4-8-6 Guarantee—Continued—					
65778	Analysis	4.23	7.22	6.57	27.42
Farmer's Fertilizer 6-8-4 Guarantee					
64960	Analysis	6.00	8.00	4.00	29.60
65555	Analysis	6.23	8.24	4.63	31.22
65776	Analysis	6.15	7.57	4.22	29.66
Farmer's Fertilizer 6-10-7 Guarantee					
64958	Analysis	6.32	7.64	4.34	30.31
65590	Analysis	6.00	10.00	7.00	35.80
65777	Analysis	5.79	10.59	7.04	36.12
Federal Chemical Company, Inc., Shreveport, Louisiana					
Daybreak 6-8-4 Fertilizer Guarantee					
65498	Analysis	6.21	8.91	7.49	35.47
Daybreak Dixie Special Guarantee					
65375	Analysis	6.00	8.00	4.00	29.60
65431	Analysis	5.85	8.81	4.39	30.76
Daybreak Trucker's Special Guarantee					
65005	Analysis	4.00	8.00	4.00	24.80
64993	Analysis	4.07	10.21	4.04	27.89
65424	Analysis	4.04	8.29	3.83	25.08
Meridian 4-8-10 Fertilizer Guarantee					
65425	Analysis	4.00	8.00	6.00	27.20
65234	Analysis	4.12	7.85	6.03	27.34
65012	Analysis	4.00	8.00	10.00	32.00
65135	Analysis	3.91	7.54	10.37	31.62
65195	Analysis	3.98	8.03	10.12	32.13
65319	Analysis	6.00	8.00	8.00	34.40
65388	Analysis	5.87	8.07	7.44	33.51
65407	Analysis	6.00	12.00	6.00	37.20
65436	Analysis	6.06	12.18	6.21	37.82
65453	Analysis	4.00	8.00	4.00	24.80
65593	Analysis	4.00	7.84	4.30	24.95
65645	Analysis	4.06	8.20	4.19	25.43
Meridian 6-8-8 Fertilizer Guarantee					
65136	Analysis	4.26	7.83	4.31	25.57
65633	Analysis	4.00	8.15	4.03	25.04
Meridian 6-12-6 Fertilizer Guarantee					
65343	Analysis	4.23	9.01	3.77	26.38
65157	Analysis	4.13	8.26	4.12	25.59
65342	Analysis	4.00	8.11	3.80	24.70
Meridian Double Duty Guarantee					
64902	Analysis	4.06	8.79	4.32	26.35
65159	Analysis	4.19	8.41	4.04	25.84
65235	Analysis	4.35	8.44	3.92	26.11
65432	Analysis	4.00	12.00	4.00	30.00
Meridian Favorite Fertilizer Guarantee					
65067	Analysis	4.09	11.62	4.13	29.89
65192	Analysis	4.43	11.64	4.01	30.57
65389	Analysis	3.00	10.00	3.00	23.80
65447	Analysis	3.41	10.45	3.24	25.66
65460	Analysis	6.00	9.00	3.00	29.70
65463	Analysis	6.22	9.62	3.52	31.66
65594	Analysis	5.91	9.23	3.26	30.09
65637	Analysis	6.00	10.00	7.00	35.80
65644	Analysis	5.74	10.88	6.69	35.95
Meridian Special Mixture Guarantee					
64901	Analysis	5.94	11.39	6.86	37.30
64978	Analysis	6.08	10.59	7.04	36.81
65060	Analysis	6.39	10.53	7.06	37.50
65067	Analysis	4.00	8.00	6.00	27.20
65192	Analysis	4.05	9.07	5.63	28.27
65389	Analysis	4.15	8.34	5.56	27.47
65447	Analysis	4.24	8.58	5.58	28.03
65460	Analysis	4.27	7.94	6.20	28.01
65463	Analysis	4.48	8.43	6.50	29.51
65594	Analysis	4.18	8.68	4.66	26.90
65637	Analysis	4.25	8.45	6.02	28.41
65644	Analysis	4.18	8.12	5.79	27.54
	Analysis	4.20	8.41	5.74	27.90
	Analysis	4.10	8.03	5.90	27.36
	Analysis	4.30	7.89	6.07	27.86
	Analysis	4.07	8.51	5.78	27.77

COMMERCIAL FERTILIZERS IN 1939-40

31

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Fidelity Chemical Corporation, Houston, Texas				
	Fidelity 0-12-4 Fertilizer Guarantee		12.00	4.00	20.40
65270	Analysis		12.18	4.17	20.83
65700	Analysis		12.14	4.36	21.01
	Fidelity 3-10-0 Fertilizer Guarantee	3.00	10.00		20.20
65283	Analysis	3.27	9.97		20.81
	Fidelity 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	23.80
64838	Analysis	3.06	9.83	3.36	24.15
65155	Analysis	3.20	10.76	3.50	25.87
65216	Analysis	3.10	10.40	2.76	24.27
65288	Analysis	3.20	10.28	3.24	24.93
65612	Analysis	3.10	10.25	3.29	24.72
	Fidelity 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
64808	Analysis	4.55	7.75	3.46	25.15
64851	Analysis	4.19	8.08	4.32	25.74
65167	Analysis	4.17	8.07	4.23	25.58
65206	Analysis	4.06	8.69	3.98	25.82
65244	Analysis	4.08	8.21	4.13	25.42
65310	Analysis	3.94	7.41	4.04	23.94
65614	Analysis	4.15	8.20	4.43	25.94
65701	Analysis	4.10	8.09	4.40	25.64
	Fidelity 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
64739	Analysis	4.01	9.05	5.75	28.29
64784	Analysis	4.75	10.09	6.12	31.86
64789	Analysis	5.35	8.95	5.22	30.74
64874	Analysis	4.51	8.01	6.02	28.45
64889	Analysis	4.25	8.42	4.54	26.60
64890	Analysis	4.35	8.21	6.32	28.69
65119	Analysis	4.18	8.08	5.65	27.31
65265	Analysis	4.37	8.28	6.39	28.92
65613	Analysis	4.10	7.86	5.98	27.24
	Fidelity 4-10-0 Fertilizer Guarantee	4.00	10.00		22.60
65699	Analysis	4.02	9.82		22.42
	Fidelity 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
64787	Analysis	4.57	12.10	4.93	32.62
64817	Analysis	4.31	12.25	4.05	31.13
64847	Analysis	4.56	12.04	4.77	32.31
64875	Analysis	4.33	12.17	4.66	31.80
65166	Analysis	4.37	12.03	4.59	31.64
65176	Analysis	4.16	12.10	4.24	30.80
65186	Analysis	4.37	12.03	4.99	32.12
65219	Analysis	4.11	12.22	4.08	30.65
65243	Analysis	4.35	11.97	4.50	31.40
65281	Analysis	4.15	11.83	4.56	30.81
65326	Analysis	4.28	12.30	4.27	31.38
65694	Analysis	4.30	11.69	4.49	30.91
	Fidelity 5-15-5 Fertilizer Guarantee	5.00	15.00	5.00	37.50
64752	Analysis	5.13	14.88	5.47	38.21
64848	Analysis	5.43	14.26	5.47	38.13
65324	Analysis	5.21	14.62	5.36	37.94
	Fidelity 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	29.70
65611	Analysis	6.04	8.58	3.26	29.56
65752	Analysis	5.94	9.22	3.11	29.98
	Fidelity 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
64738	Analysis	5.88	9.82	6.72	34.94
64744	Analysis	6.01	10.41	7.02	36.37
64837	Analysis	6.12	10.05	7.24	36.45
65168	Analysis	6.28	9.82	7.56	36.91
	Fidelity 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
64723	Analysis	6.29	11.73	6.37	37.99
64733	Analysis	6.21	12.08	6.40	38.28
64743	Analysis	6.38	12.00	6.33	38.51
64781	Analysis	5.77	11.84	6.85	37.46
64809	Analysis	6.74	11.80	6.42	39.22

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Fidelity Chemical Corporation, Houston, Texas—					
Continued.					
Fidelity 6-12-6 Fertilizer Guarantee—Continued—					
64829	Analysis	6.41	12.18	6.39	38.88
64852	Analysis	6.34	12.08	6.63	38.88
65256	Analysis	6.33	12.62	6.40	39.28
Fidelity 10-10-0 Fertilizer Guarantee		10.00	10.00		37.00
65753	Analysis	10.91	8.92		37.78
Fidelity 10-20-10 Fertilizer Guarantee		10.00	20.00	10.00	62.00
64745	Analysis	9.20	17.71	9.08	56.00
64828	Analysis	9.24	23.84	9.12	64.11
Fidelity 11-48-0 Fertilizer Guarantee		11.00	48.00		88.80
64715	Analysis	10.89	48.11		88.68
64754	Analysis	10.43	45.32		83.95
Fidelity 16-20-0 Fertilizer Guarantee		16.00	20.00		64.40
64716	Analysis	14.08	28.51		70.85
64760	Analysis	13.09	25.30		64.31
64767	Analysis	13.69	26.86		67.78
Fidelity Sulphate of Ammonia Guarantee		20.00			48.00
64755	Analysis	20.41			48.98
64788	Analysis	20.19			48.46
64859	Analysis	20.56			49.34
64866	Analysis	20.21			48.50
64887	Analysis	19.84			47.62
Fidelity 20% Superphosphate Guarantee			20.00		26.00
64753	Analysis		21.16		27.51
Fidelity 45% Superphosphate Guarantee			45.00		58.50
64759	Analysis		43.30		56.29
64768	Analysis		40.32		52.42
Ford Motor Company, Dearborn, Michigan					
Ford Ammonium Sulphate Guarantee		20.80			49.92
64785	Analysis	20.80			49.92
64800	Analysis	20.80			49.92
64885	Analysis	20.84			50.02
Gilmer Cotton Oil and Fertilizer Company, Gilmer, Texas					
G. C. O. & F. Co.'s Superior Meal Compound Guarantee		3.00	10.00	3.00	23.80
65512	Analysis	3.05	9.60	3.87	24.44
Texas Longhorn Cotton Surecrop Guarantee		4.00	8.00	4.00	24.80
64999	Analysis	4.34	8.55	4.29	26.69
65395	Analysis	4.19	8.10	4.37	25.83
65509	Analysis	4.30	8.28	3.13	24.84
65514	Analysis	4.14	8.30	5.33	27.13
65760	Analysis	5.13	8.89	5.03	29.91
Texas Longhorn Surecrop Truckers Best Guarantee ..		6.00	10.00	7.00	35.80
65001	Analysis	4.96	9.61	7.14	32.96
Texas Longhorn Special Cotton Surecrop Guarantee ..		6.00	12.00	6.00	37.20
64997	Analysis	6.28	11.56	6.52	37.92
Texas Longhorn Tomato Surecrop Guarantee		4.00	8.00	6.00	27.20
64998	Analysis	4.03	7.48	5.71	26.24
65515	Analysis	3.95	8.05	6.38	27.61
65759	Analysis	4.47	8.20	6.48	29.17
Texas Longhorn Yam Surecrop Guarantee		4.00	8.00	10.00	32.00
65000	Analysis	4.24	9.91	10.18	35.28
65513	Analysis	4.04	8.62	9.05	31.77
65758	Analysis	4.53	8.23	10.35	33.99
City of Houston, Engineering Department, Houston, Texas					
Hu-Actinite 5.5-2.0-0 Guarantee		5.50	2.00		15.80
64786	Analysis	4.77	3.85		16.46
International Agricultural Corporation, Texarkana, Arkansas-Texas					
International 4-8-4 Fertilizer Guarantee		4.00	8.00	4.00	24.80
65032	Analysis	4.02	7.78	4.03	24.60
65099	Analysis	4.03	8.33	4.39	25.77
65150	Analysis	3.92	7.80	4.04	24.40

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
International Agricultural Corporation, Texarkana, Arkansas-Texas—Continued.					
International 4-8-4 Fertilizer Guarantee—Continued—					
65211	Analysis	4.13	8.48	4.08	25.83
65315	Analysis	4.00	8.24	3.89	24.98
65386	Analysis	4.29	8.35	4.10	26.08
65411	Analysis	4.02	8.12	4.08	25.11
65414	Analysis	3.92	8.63	3.93	25.35
65443	Analysis	4.06	7.61	4.12	24.57
International 4-8-6 Truck Fertilizer Guarantee		4.00	8.00	6.00	27.20
64966	Analysis	4.02	7.87	6.05	27.14
65071	Analysis	3.96	7.69	5.83	26.50
65365	Analysis	4.02	8.54	5.70	27.59
65377	Analysis	3.95	7.49	6.11	26.55
65385	Analysis	3.98	8.39	6.02	27.68
65505	Analysis	4.02	8.42	5.93	27.72
65646	Analysis	3.98	7.83	6.18	27.15
International 4-8-10 Fertilizer Guarantee		4.00	8.00	10.00	32.00
65762	Analysis	4.02	7.62	10.47	32.12
International 4-10-0 Ammoniated Compound Guarantee		4.00	10.00		22.60
65151	Analysis	4.00	10.15		22.80
International 4-12-4 Fertilizer Guarantee		4.00	12.00	4.00	30.00
65068	Analysis	4.06	12.09	4.02	30.28
International 4-12-4 Rainbow Cotton Fertilizer Guarantee		4.00	12.00	4.00	30.00
65364	Analysis	4.06	12.53	4.07	30.91
65418	Analysis	4.13	12.80	4.01	31.36
65451	Analysis	4.14	12.26	4.14	30.85
65592	Analysis	3.94	13.01	4.16	31.36
65772	Analysis	4.11	12.35	4.06	30.79
International 6-8-4 Fertilizer Guarantee		6.00	8.00	4.00	29.60
65413	Analysis	6.00	8.47	4.11	30.34
65773	Analysis	5.93	8.40	4.08	30.05
International 6-8-8 Fertilizer Guarantee		6.00	8.00	8.00	34.40
64968	Analysis	6.04	8.33	7.96	34.88
65349	Analysis	6.03	8.02	7.71	34.15
65560	Analysis	6.06	8.21	8.03	34.85
65761	Analysis	6.03	8.45	8.58	35.76
International 6-10-7 Fertilizer Guarantee		6.00	10.00	7.00	35.80
65098	Analysis	6.18	9.85	7.19	36.27
65149	Analysis	5.98	10.09	7.25	36.17
65378	Analysis	6.14	10.30	7.34	36.94
65504	Analysis	6.00	10.03	7.02	35.86
65599	Analysis	6.13	9.74	7.18	35.99
65626	Analysis	6.09	10.18	7.22	36.51
International 6-12-6 Fertilizer Guarantee		6.00	12.00	6.00	37.20
64974	Analysis	6.06	11.91	6.04	37.27
International 18% Superphosphate Guarantee			18.00		23.40
65468	Analysis		18.56		24.13
Jacksonville Fertilizer Company, Jacksonville, Texas					
Red Tomato 3-10-3 Fertilizer Guarantee		3.00	10.00	3.00	23.80
65077	Analysis	3.58	10.05	3.56	25.93
Red Tomato 4-8-4 Fertilizer Guarantee		4.00	8.00	4.00	24.80
65417	Analysis	4.08	8.08	4.11	25.22
65508	Analysis	4.88	8.28	4.36	26.50
65724	Analysis	4.64	8.46	4.16	27.13
Red Tomato 4-8-6 Fertilizer Guarantee		4.00	8.00	6.00	27.20
65125	Analysis	4.67	12.17	4.98	33.01
65579	Analysis	4.32	7.91	6.62	28.59
65771	Analysis	5.16	8.87	6.04	31.16
Red Tomato 4-12-4 Fertilizer Guarantee		4.00	12.00	4.00	30.00
65529	Analysis	3.83	13.17	5.09	32.42
Red Tomato 6-8-8 Fertilizer Guarantee		6.00	8.00	8.00	34.40
65580	Analysis	6.26	8.03	8.33	35.46

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Jacksonville Fertilizer Company, Jacksonville, Texas—					
—Continued.					
	Red Tomato 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
65124	Analysis	6.22	10.86	7.18	37.67
65725	Analysis	6.82	10.26	6.85	37.93
Kelly-Weber and Company, Inc., Lake Charles, Louisiana					
	Vitalizer Brand Fertilizer Special Plant Food				
	Guarantee	4.00	12.00	4.00	30.00
65298	Analysis	4.87	13.01	4.82	34.38
	Weber-King Brand Fertilizer Special 0-12-4 Guarantee		12.00	4.00	20.40
65330	Analysis		13.21	4.18	22.19
65683	Analysis		12.45	4.24	21.28
65705	Analysis		12.73	4.02	21.37
	Weber-King Brand Fertilizer Special 3-10-3 Guarantee	3.00	10.00	3.00	23.80
64943	Analysis	3.13	9.89	3.51	24.46
65285	Analysis	3.04	10.12	3.81	25.03
65297	Analysis	3.25	10.08	3.17	24.70
65331	Analysis	3.19	10.50	3.50	25.51
65704	Analysis	3.20	10.19	2.57	24.01
	Weber-King Brand Fertilizer Special 4-8-4 Guarantee	4.00	8.00	4.00	24.80
64803	Analysis	3.80	8.61	4.08	25.21
64940	Analysis	4.08	7.84	5.67	26.78
65273	Analysis	4.02	8.53	4.31	25.91
65698	Analysis	3.98	8.32	4.14	25.34
	Weber-King Brand Fertilizer Special 4-8-6 Guarantee	4.00	8.00	6.00	27.20
64944	Analysis	4.04	7.74	6.17	27.16
	Weber-King Brand Fertilizer Special 4-10-0 Guarantee	4.00	10.00		22.60
65289	Analysis	4.40	8.91		22.14
65333	Analysis	4.20	10.36		23.55
65684	Analysis	4.35	9.74		23.10
	Weber-King Brand Fertilizer Special 4-12-4 Guarantee	4.00	12.00	4.00	30.00
64941	Analysis	4.06	12.46	4.22	31.00
65279	Analysis	4.02	11.88	4.34	30.30
65296	Analysis	4.06	11.75	4.32	30.20
	Weber-King Brand Fertilizer Special 6-10-7 Guarantee	6.00	10.00	7.00	35.80
64942	Analysis	5.78	10.51	7.53	36.57
	Weber-King Brand Fertilizer Special 6-12-6 Guarantee	6.00	12.00	6.00	37.20
64804	Analysis	6.19	12.68	6.02	38.56
	Weber-King Brand 18% Superphosphate Guarantee		18.00		23.40
65692	Analysis		18.67		24.27
Longview Cotton Oil Company, Longview, Texas					
	Longview Cotton and Corn Special Fertilizer Guarantee	4.00	12.00	4.00	30.00
65517	Analysis	4.10	12.14	4.38	30.88
65748	Analysis	4.42	12.28	4.44	31.90
	Longview Cotton Special Fertilizer Guarantee	3.00	10.00	3.00	23.80
65024	Analysis	3.03	10.22	3.73	25.04
65474	Analysis	3.16	10.01	3.30	24.55
	Longview Gregg County Special Fertilizer Guarantee	4.00	8.00	4.00	24.80
65026	Analysis	4.16	8.07	4.47	25.83
65473	Analysis	4.05	8.02	4.20	25.19
65747	Analysis	4.27	8.10	4.05	25.64
	Longview Potash Special Guarantee		12.00	4.00	20.40
65048	Analysis		12.30	5.26	22.30
	Longview Prize Fertilizer Guarantee	6.00	12.00	6.00	37.20
65025	Analysis	6.02	12.05	6.23	37.60
65472	Analysis	6.10	12.39	6.03	37.99
	Longview Truck Special Fertilizer Guarantee	4.00	8.00	6.00	27.20
65049	Analysis	4.22	7.89	6.30	27.95
65475	Analysis	4.10	8.14	6.17	27.82
	Longview Vegetable Fertilizer Guarantee	6.00	10.00	7.00	35.80
65066	Analysis	5.68	9.86	7.50	35.45
65476	Analysis	6.03	10.13	7.48	36.62

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Marshall Cotton Oil Company, Marshall, Texas					
	Marshall 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	23.80
65399	Analysis	3.44	10.06	3.22	25.20
	Marshall 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
64986	Analysis	4.09	7.81	3.88	24.63
65401	Analysis	4.04	8.01	4.02	24.93
61750	Analysis	4.02	8.06	4.43	25.45
	Marshall 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
64989	Analysis	4.24	7.43	5.67	26.64
	Marshall 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
64991	Analysis	4.38	11.63	4.04	30.48
65344	Analysis	4.20	12.14	4.10	30.78
	Marshall 6-8-4 Fertilizer Guarantee	6.00	8.00	4.00	29.60
64990	Analysis	6.08	6.83	4.22	28.53
65405	Analysis	5.66	8.34	4.06	29.29
65751	Analysis	6.42	7.43	4.03	29.91
	Marshall 6-8-8 Fertilizer Guarantee	6.00	8.00	8.00	34.40
65400	Analysis	5.31	8.49	8.03	33.42
	Marshall 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	35.80
64988	Analysis	6.34	9.44	6.85	35.71
	Marshall 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
64987	Analysis	6.63	11.39	6.02	37.94
65404	Analysis	6.29	11.54	5.76	37.01
	Marshall Super and Meal Fertilizer 4-10-0 Guarantee	4.00	10.00		22.60
65398	Analysis	4.39	10.22		23.83
Mixon Brothers, Kirbyville, Texas					
	Jasco Brand Special No. 3-10-3 Guarantee	3.00	10.00	3.00	23.80
64912	Analysis	3.70	9.50	4.15	26.21
65360	Analysis	3.30	10.21	3.16	24.98
	Jasco Brand Special No. 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65339	Analysis	4.06	7.84	4.19	24.96
	Jasco Brand Special No. 4-8-10 Guarantee	4.00	8.00	10.00	32.00
64916	Analysis	3.95	7.82	9.40	30.93
	Jasco Brand Special No. 4-12-4 Guarantee	4.00	12.00	4.00	30.00
64915	Analysis	4.08	12.09	4.19	30.54
65287	Analysis	4.00	11.58	4.38	29.91
	Jasco Brand Special No. 6-10-7 Guarantee	6.00	10.00	7.00	35.80
64913	Analysis	6.16	9.42	6.77	35.15
65361	Analysis	5.94	10.03	6.48	35.08
	Jasco Brand Special No. 6-12-6 Guarantee	6.00	12.00	6.00	37.20
64914	Analysis	6.14	12.05	5.74	37.30
65338	Analysis	6.20	11.94	6.23	37.88
Nicholson's Seed Store, Dallas, Texas					
	Nicholson's All-Round Fertilizer Guarantee	4.00	12.00	4.00	30.00
65536	Analysis	4.66	12.50	4.06	32.30
	Nicholson's Evergreen Lawn Dressing Guarantee	10.00	6.00	4.00	36.60
65575	Analysis	10.07	7.07	4.08	38.26
Oil Mill and Fertilizer Works, Henderson, Texas					
	Wolf Brand Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	23.80
65011	Analysis	3.58	9.67	3.20	25.00
	Wolf Brand Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65031	Analysis	4.24	8.05	4.12	25.59
65478	Analysis	4.06	7.10	4.05	23.83
65655	Analysis	4.23	8.02	3.80	25.14
65714	Analysis	3.94	7.14	3.60	23.06
	Wolf Brand Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	27.20
65520	Analysis	3.92	8.64	5.68	27.46
	Wolf Brand Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	30.00
65028	Analysis	4.13	11.94	4.23	30.51
65519	Analysis	4.42	12.15	4.49	31.80
65654	Analysis	4.36	11.71	4.43	31.00
	Wolf Brand Fertilizer 6-8-4 Guarantee	6.00	8.00	4.00	29.60
65477	Analysis	5.88	7.35	4.37	28.91

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Oil Mill and Fertilizer Works, Henderson, Texas—					
—Continued.					
	Wolf Brand Fertilizer 6-10-7 Guarantee	6.00	10.00	7.00	35.80
65029	Analysis	6.07	9.77	7.98	36.85
65479	Analysis	5.48	8.75	6.83	32.73
	Wolf Brand Fertilizer 6-12-6 Guarantee	6.00	12.00	6.00	37.20
65013	Analysis	6.21	12.07	5.82	37.57
65518	Analysis	6.02	7.58	5.58	31.00
	Wolf Brand Superphosphate 18 Per Cent Guarantee....		18.00		23.40
65030	Analysis		18.77		24.40
Pate Bros. Fertilizer Works, Sulphur Springs, Texas					
	Pate's Red Star Brand 3-10-3 Fertilizer Guarantee....	3.00	10.00	3.00	23.80
64947	Analysis	3.44	10.11	3.56	25.67
65441	Analysis	3.28	10.00	3.02	24.49
	Pate's Red Star Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
64949	Analysis	4.31	8.69	4.22	26.70
65507	Analysis	4.42	8.27	4.41	26.65
65563	Analysis	4.55	8.62	4.06	27.00
	Pate's Red Star Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
64950	Analysis	4.14	7.76	6.32	27.61
65412	Analysis	4.44	8.16	6.24	28.76
65459	Analysis	4.14	8.34	5.61	27.51
65503	Analysis	4.26	8.42	6.02	28.39
	Pate's Red Star Brand 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
64948	Analysis	4.46	12.09	4.17	31.42
65502	Analysis	4.52	12.18	4.19	31.71
	Pate's Red Star Brand 18% Superphosphate Guarantee		18.00		23.40
65573	Analysis		19.49		25.34
Pittsburg Cotton Oil Company, Pittsburg, Texas					
	4-8-4 Double Circle Fertilizer Guarantee	4.00	8.00	4.00	24.80
64981	Analysis	4.49	9.92	4.88	29.54
65429	Analysis	3.85	8.23	3.93	24.66
65466	Analysis	4.00	7.76	4.12	24.63
65768	Analysis	4.16	7.76	4.08	24.97
	4-8-6 Double Circle Fertilizer Guarantee	4.00	8.00	6.00	27.20
64980	Analysis	3.78	7.62	6.11	26.31
65470	Analysis	3.88	7.94	5.70	26.47
65770	Analysis	4.00	7.59	5.62	26.21
	4-10-0 Double Circle Fertilizer Guarantee	4.00	10.00		22.60
64983	Analysis	4.51	9.26		22.86
	6-8-4 Double Circle Fertilizer Guarantee	6.00	8.00	4.00	29.60
64979	Analysis	6.15	8.37	4.05	30.50
65430	Analysis	6.01	8.16	4.80	30.79
	6-8-8 Double Circle Fertilizer Guarantee	6.00	8.00	8.00	34.40
65445	Analysis	5.49	8.32	8.34	34.01
65767	Analysis	5.81	8.04	8.38	34.45
	6-10-7 Double Circle Fertilizer Guarantee	6.00	10.00	7.00	35.80
65428	Analysis	5.63	10.06	7.24	35.28
	6-12-6 Double Circle Fertilizer Guarantee	6.00	12.00	6.00	37.20
64982	Analysis	5.79	10.41	6.39	35.10
65769	Analysis	6.01	12.48	5.58	37.34
Port Fertilizer Company, Los Fresnos, Texas					
	Valley Port Brand 5-15-5 Fertilizer Guarantee	5.00	15.00	5.00	37.50
64776	Analysis	5.15	14.51	6.37	38.86
	Valley Port Brand 11-48-0 Fertilizer Guarantee	11.00	48.00		88.80
64746	Analysis	10.92	48.02		88.64
64757	Analysis	10.99	47.76		88.47
	Valley Port Brand 16-20-0 Fertilizer Guarantee	16.00	20.00		64.40
64766	Analysis	15.21	20.83		63.58
64775	Analysis	14.91	21.73		64.03
	Valley Port Brand Sulphate of Ammonia Guarantee	20.00			48.00
64749	Analysis	20.46			49.10
64765	Analysis	20.62			49.49

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Port Fertilizer Co., Los Fresnos, Texas—Continued.					
Valley Port Brand Sulphate of Ammonia Guarantee—Continued—					
64774	Analysis	25.59			49.42
64778	Analysis	20.68			49.63
64862	Analysis	20.56			49.34
Valley Port Brand 32% Superphosphate Guarantee			32.00		41.60
64747	Analysis		34.18		44.43
64758	Analysis		35.14		45.68
The Pulverized Manure Company, Chicago, Illinois					
Wizard Brand Pulverized Sheep Manure Guarantee					
65574	Analysis	2.00	1.00	2.00	8.50
		1.88	1.88	4.05	11.81
Shreveport Fertilizer Works, Shreveport, Louisiana					
Lion 3-10-3 Meal Formula Guarantee					
65562	Analysis	3.00	10.00	3.00	23.80
		3.34	10.13	2.93	24.71
Lion 4-8-4 Fertilizer Guarantee					
64995	Analysis	4.00	8.00	4.00	24.80
65039	Analysis	4.35	8.08	4.63	26.50
65084	Analysis	4.04	8.76	4.66	26.68
65123	Analysis	4.17	7.89	4.03	25.11
65245	Analysis	4.06	8.18	4.11	25.34
65301	Analysis	4.09	8.40	4.57	26.22
65384	Analysis	4.02	8.55	3.87	25.41
65538	Analysis	4.49	8.40	4.14	26.67
65561	Analysis	3.98	8.91	4.35	26.35
65628	Analysis	3.79	8.09	3.79	24.17
65638	Analysis	4.55	8.08	4.12	26.36
65717	Analysis	3.90	7.99	3.75	24.25
65744	Analysis	3.77	7.92	3.79	23.90
		4.00	8.47	4.35	25.83
Lion 4-8-6 Fertilizer Guarantee					
64954	Analysis	4.00	8.00	6.00	27.20
65040	Analysis	3.95	8.03	6.31	27.49
65050	Analysis	4.30	8.21	6.66	28.98
65074	Analysis	4.04	7.77	6.52	27.62
65088	Analysis	4.09	7.72	6.63	27.82
65089	Analysis	4.15	9.05	5.45	28.27
65336	Analysis	4.12	7.62	6.39	27.47
65426	Analysis	3.83	8.31	6.06	27.26
65464	Analysis	4.13	8.13	5.82	27.46
65500	Analysis	3.94	8.71	5.70	27.62
65584	Analysis	4.07	8.02	5.60	26.92
65745	Analysis	3.94	8.58	5.38	27.07
		4.00	8.30	6.21	27.84
Lion 4-8-10 Fertilizer Guarantee					
65427	Analysis	4.00	8.00	10.00	32.00
		4.19	8.19	10.24	33.00
Lion 4-12-4 Fertilizer Guarantee					
65335	Analysis	4.00	12.00	4.00	30.00
65708	Analysis	4.42	11.95	4.05	31.01
		4.44	12.12	4.16	31.41
Lion 6-9-3 Fertilizer Guarantee					
65246	Analysis	6.00	9.00	3.00	29.70
		5.95	10.56	3.06	31.68
Lion 10-0-10 Fertilizer Guarantee					
65720	Analysis	10.00		10.00	36.00
65746	Analysis	10.11		8.98	35.94
		9.72		9.72	34.99
Lion NPK 23 Fertilizer Guarantee					
64955	Analysis	6.00	10.00	7.00	35.80
64996	Analysis	6.32	10.35	6.74	36.72
65051	Analysis	6.37	10.46	7.04	37.34
65057	Analysis	6.32	9.52	7.34	36.36
65073	Analysis	6.28	10.57	7.06	37.28
65394	Analysis	6.29	10.79	7.05	37.59
65571	Analysis	6.31	10.44	7.01	37.12
65639	Analysis	5.70	10.03	6.46	34.47
65718	Analysis	6.07	10.30	8.65	38.34
		5.35	9.93	5.77	32.67

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Shreveport Fertilizer Works, Shreveport, Louisiana—					
—Continued.					
	Longhorn 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	24.80
64911	Analysis	4.01	9.71	4.19	27.27
64929	Analysis	4.20	8.12	4.24	25.73
65016	Analysis	4.15	7.31	4.39	24.73
65118	Analysis	4.28	8.23	4.38	26.23
65312	Analysis	4.09	7.98	3.44	24.32
65643	Analysis	4.07	8.39	3.08	24.38
	Longhorn 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.20
64928	Analysis	3.58	8.22	6.20	26.72
65172	Analysis	3.44	6.98	6.64	25.30
65487	Analysis	3.81	8.15	6.04	26.99
	Longhorn 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
64910	Analysis	4.20	12.44	4.05	31.11
65120	Analysis	4.53	12.24	4.37	32.02
65171	Analysis	4.33	12.13	4.77	31.88
65204	Analysis	4.54	12.18	4.04	31.58
65313	Analysis	4.47	12.29	4.11	31.64
65677	Analysis	4.29	11.39	4.09	30.02
65709	Analysis	4.33	12.09	4.06	30.98
	Longhorn 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
64926	Analysis	6.41	12.00	6.04	38.23
	Longhorn NPK 23 Fertilizer Guarantee	6.00	10.00	7.00	35.80
64927	Analysis	5.92	10.53	6.56	35.77
65015	Analysis	6.33	10.01	7.06	36.67
65075	Analysis	6.37	11.32	7.09	38.52
65103	Analysis	5.88	10.12	6.80	35.43
65156	Analysis	6.35	10.58	7.17	37.59
65203	Analysis	6.37	10.46	7.02	37.31
65291	Analysis	6.43	9.29	7.42	36.41
65311	Analysis	6.23	10.36	5.99	35.61
65318	Analysis	6.42	10.34	7.09	37.36
65532	Analysis	6.25	10.87	6.77	37.25
65564	Analysis	6.53	10.49	6.80	37.47
65578	Analysis	6.43	10.44	7.02	37.42
	Longhorn Sulphate of Ammonia Guarantee	20.00			48.00
65719	Analysis	19.72			47.33
	Longhorn 18% Superphosphate Guarantee		18.00		23.40
65345	Analysis		19.03		24.74
	Longhorn 20% Superphosphate Guarantee		20.00		26.00
65201	Analysis		21.09		27.42
65207	Analysis		19.76		25.69
65676	Analysis		21.35		27.76
Soil Builders, Inc., Dunnellon, Florida					
	Mineral Colloids Brand Soft Phosphate with				
	Colloidal Clay, 22% Total Guarantee		22.00*		6.60
64780	Analysis		21.88*		6.56
*Total phosphoric acid					
Swift and Company Fertilizer Works, Harvey and					
Shreveport, Louisiana and Houston, Texas					
	Muriate of Potash 50% Guarantee			50.00	60.00
64703	Analysis			44.70	53.64
	Nitrate of Soda Guarantee	16.00			38.40
64713	Analysis	16.11			38.66
	Pioneer 3-10-3 Guarantee	3.00	10.00	3.00	23.80
65352	Analysis	2.98	9.17	3.17	22.87
	Pioneer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65410	Analysis	4.13	7.57	4.25	24.85
	Pioneer 4-8-6 Guarantee	4.00	8.00	6.00	27.20
65353	Analysis	4.24	8.32	5.65	27.78
65415	Analysis	4.03	8.12	6.05	27.49
	Pioneer 6-8-4 Guarantee	6.00	8.00	4.00	29.60
65467	Analysis	5.81	8.19	4.32	29.77

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Swift and Company Fertilizer Works, Harvey and Shreveport, Louisiana and Houston, Texas—Continued.					
	Pioneer 6-8-8 Guarantee	6.00	8.00	8.00	34.40
65421	Analysis	5.91	8.26	8.39	34.99
	Sulphate of Ammonia 20% Guarantee	20.00			48.00
64704	Analysis	20.52			49.25
	Swift's K. O. Non Acid Forming 6-8-8 Guarantee	6.00	8.00	8.00	34.40
64839	Analysis	5.86	9.13	8.10	35.65
64857	Analysis	5.90	8.38	7.86	34.48
64894	Analysis	6.00	8.03	8.01	34.45
64975	Analysis	5.92	7.75	7.45	33.23
65037	Analysis	6.18	8.39	8.10	35.46
65081	Analysis	5.93	8.68	8.18	35.33
65148	Analysis	5.52	8.59	7.70	33.66
65169	Analysis	6.04	8.47	8.46	35.66
65321	Analysis	5.47	8.42	6.34	31.69
65373	Analysis	6.02	8.21	8.09	34.83
65435	Analysis	6.09	8.19	8.19	35.10
65444	Analysis	6.03	8.37	8.34	35.36
65527	Analysis	6.22	8.30	8.46	35.87
65595	Analysis	5.98	8.03	8.26	34.70
65607	Analysis	5.91	8.36	8.18	34.87
65630	Analysis	6.04	8.36	8.12	35.11
65740	Analysis	5.91	8.44	8.05	34.81
65774	Analysis	5.76	8.19	7.16	33.06
	Swift's pH 7 6-8-4 Guarantee	6.00	8.00	4.00	29.60
64718	Analysis	5.77	8.47	4.26	29.97
64792	Analysis	5.90	8.45	4.11	30.08
64823	Analysis	6.21	7.84	4.52	30.51
64844	Analysis	5.95	8.09	4.36	30.03
64846	Analysis	6.32	7.49	4.18	29.93
64854	Analysis	6.04	8.36	4.05	30.23
64855	Analysis	6.00	8.12	4.29	30.11
64860	Analysis	6.77	8.13	4.49	32.21
64868	Analysis	6.50	7.79	4.43	31.05
64869	Analysis	5.95	7.85	4.29	29.64
64871	Analysis	6.34	7.93	4.39	30.80
64877	Analysis	5.95	8.00	4.16	29.67
64946	Analysis	6.11	8.16	4.12	30.21
64992	Analysis	6.07	8.06	4.15	30.03
65083	Analysis	6.08	8.31	4.32	30.57
65091	Analysis	6.06	8.22	4.42	30.53
65097	Analysis	6.13	8.45	4.14	30.67
65108	Analysis	6.14	8.15	4.24	30.43
65144	Analysis	6.02	7.83	4.20	29.67
65196	Analysis	6.06	8.16	4.31	30.32
65210	Analysis	6.09	8.13	4.12	30.13
65213	Analysis	6.03	8.53	4.39	30.83
65295	Analysis	5.98	7.52	4.16	29.12
65356	Analysis	6.02	7.72	4.10	29.41
65393	Analysis	6.29	8.01	4.03	30.35
65402	Analysis	6.12	7.73	4.16	29.73
65409	Analysis	6.00	8.01	4.25	29.91
65439	Analysis	6.23	8.14	4.12	30.47
65454	Analysis	6.15	8.17	4.20	30.42
65554	Analysis	6.08	8.29	4.14	30.34
65596	Analysis	6.39	7.84	4.22	30.59
65598	Analysis	6.09	8.22	4.18	30.33
65620	Analysis	6.03	8.15	4.18	30.09
65631	Analysis	6.04	8.18	4.17	30.13
65653	Analysis	6.06	8.68	3.65	30.20
65671	Analysis	6.08	7.60	4.02	29.29
65686	Analysis	6.32	8.19	3.71	30.27

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Number Laboratory	Manufacturer, place of business and brand	Nitrogen per cent	Potash, phosphoric acid, per cent	Available per cent	Valuation found, per ton
Swift and Company Fertilizer Works, Harvey and Shreveport, Louisiana and Houston, Texas—Continued.					
Swift's pH 7 6-8-4 Guarantee—Continued—					
65741	Analysis	5.73	8.36	4.47	29.98
65775	Analysis	5.70	8.09	4.18	29.22
Swift's Red Steer Brand 8-10-3 Guarantee		3.00	10.00	3.00	23.80
65275	Analysis	3.65	8.38	3.83	24.25
65306	Analysis	3.08	9.62	3.49	24.09
65208	Analysis	3.02	10.34	2.69	23.92
Swift's Red Steer Brand 4-8-4 Guarantee		4.00	8.00	4.00	24.80
64924	Analysis	4.01	8.45	4.02	25.43
64956	Analysis	4.07	7.66	4.14	24.70
64965	Analysis	4.07	7.70	4.13	24.74
65014	Analysis	3.95	7.49	4.31	24.39
65020	Analysis	4.17	6.46	4.22	23.47
65112	Analysis	4.25	7.74	4.23	25.34
65143	Analysis	3.68	7.81	4.05	23.84
65170	Analysis	4.03	8.27	4.02	25.24
65181	Analysis	3.90	8.76	4.29	25.90
65183	Analysis	3.85	8.40	3.80	24.72
65277	Analysis	3.97	7.59	4.62	24.94
65294	Analysis	3.94	8.43	4.17	25.42
65322	Analysis	3.77	8.56	3.53	24.42
65372	Analysis	4.27	8.10	4.23	25.86
65392	Analysis	4.44	8.04	4.04	25.96
65480	Analysis	4.14	8.25	4.47	26.03
65481	Analysis	4.03	8.22	4.19	25.39
65685	Analysis	4.09	8.34	3.93	25.38
Swift's Red Steer Brand 4-8-4 Fertilizer Guarantee....		4.00	8.00	4.00	24.80
64807	Analysis	3.42	7.26	4.72	23.31
65076	Analysis	4.02	8.54	4.04	25.60
65485	Analysis	4.18	8.66	4.18	26.31
65582	Analysis	4.35	9.42	3.31	26.66
65623	Analysis	4.00	8.55	4.10	25.64
65657	Analysis	3.84	7.82	3.86	24.02
65716	Analysis	4.10	8.07	4.09	25.24
65739	Analysis	4.32	8.49	4.68	27.03
Swift's Red Steer Brand 4-8-6 Guarantee		4.00	8.00	6.00	27.20
64945	Analysis	3.92	8.13	6.03	27.22
64964	Analysis	3.97	7.78	6.03	26.94
65038	Analysis	4.19	8.05	5.52	27.15
65082	Analysis	3.91	9.35	7.05	30.00
65276	Analysis	4.17	8.25	6.48	28.52
65382	Analysis	4.08	8.28	5.46	27.10
65387	Analysis	4.19	8.39	6.16	28.36
65420	Analysis	4.28	8.43	5.83	28.23
65486	Analysis	4.17	8.36	6.29	28.43
65553	Analysis	4.09	8.06	6.15	27.68
Swift's Red Steer Brand 4-8-6 Fertilizer Guarantee		4.00	8.00	6.00	27.20
64895	Analysis	4.26	7.70	4.50	25.63
65232	Analysis	4.08	8.12	4.91	26.24
65438	Analysis	4.16	7.79	6.10	27.43
65455	Analysis	4.04	8.05	5.91	27.26
65668	Analysis	4.16	8.09	5.19	26.73
65765	Analysis	4.16	8.01	6.06	27.66
Swift's Red Steer Brand 4-8-10 Guarantee		4.00	8.00	10.00	32.00
65766	Analysis	4.09	8.32	10.33	33.04
Swift's Red Steer Brand 4-10-0 Fertilizer Guarantee....		4.00	10.00		22.60
65107	Analysis	4.21	10.17		23.32
65329	Analysis	4.17	10.53		23.70
Swift's Red Steer Brand 4-12-4 Guarantee		4.00	12.00	4.00	30.00
64849	Analysis	4.08	12.36	4.23	31.00
64908	Analysis	4.15	12.15	4.04	30.61

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Number Laboratory	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Swift and Company Fertilizer Works, Harvey and Shreveport, Louisiana and Houston, Texas—Continued.					
Swift's Red Steer Brand 4-12-4 Guarantee—Continued—					
64925	Analysis	4.04	12.11	3.90	30.12
65142	Analysis	4.00	12.02	4.53	30.67
65180	Analysis	4.09	12.44	4.58	31.49
65197	Analysis	4.30	12.24	4.75	31.93
65214	Analysis	4.13	12.05	4.48	30.96
65236	Analysis	4.14	11.39	4.13	29.71
65334	Analysis	4.06	12.52	4.59	31.53
65493	Analysis	4.41	12.21	4.02	31.27
	Swift's Red Steer Brand 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.00
65233	Analysis	4.15	12.18	4.28	30.93
65672	Analysis	4.18	11.77	3.89	30.00
	Swift's Red Steer Brand 5-15-5 Fertilizer Guarantee	5.00	15.00	5.00	37.50
64826	Analysis	5.29	14.63	5.32	38.10
64843	Analysis	4.91	14.62	5.54	37.44
64845	Analysis	5.01	14.32	5.39	37.11
	Swift's Red Steer Brand 6-9-3 Guarantee	6.00	9.00	3.00	29.70
65534	Analysis	6.00	8.76	4.34	31.00
	Swift's Red Steer Brand 6-10-7 Guarantee	6.00	10.00	7.00	35.80
65085	Analysis	6.28	10.06	7.25	36.85
65111	Analysis	6.02	10.42	5.58	34.70
65374	Analysis	6.00	10.33	7.08	36.33
65496	Analysis	6.23	10.66	7.05	37.27
	Swift's Red Steer Brand 6-10-7 Fertilizer Guarantee....	6.00	10.00	7.00	35.80
64701	Analysis	6.00	7.99	7.76	34.10
65627	Analysis	5.69	9.58	6.04	33.36
65667	Analysis	6.06	10.15	6.34	35.35
	Swift's Red Steer Brand 6-12-6 Guarantee	6.00	12.00	6.00	37.20
65274	Analysis	6.17	12.46	6.13	38.37
65280	Analysis	6.24	12.16	6.29	38.84
65681	Analysis	6.21	11.72	5.88	37.20
	Swift's Red Steer Brand 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.20
64722	Analysis	6.00	11.91	6.68	37.90
64724	Analysis	6.07	12.11	6.28	37.85
64791	Analysis	6.01	11.77	6.62	37.66
65824	Analysis	6.20	12.06	6.64	38.53
64850	Analysis	6.04	11.84	6.08	37.19
64853	Analysis	6.01	11.52	6.18	36.82
64856	Analysis	6.02	11.77	6.32	37.33
65715	Analysis	6.06	11.09	5.80	35.92
	Swift's Red Steer Brand 16-20-0 Fertilizer Guarantee....	16.00	20.00		64.40
64858	Analysis	14.96	18.62		60.11
64865	Analysis	15.69	18.69		61.96
	Swift's Red Steer Brand 10-0-10 Fertilizer Guarantee....	10.00		10.00	36.00
65528	Analysis	7.51		10.48	30.60
65723	Analysis	9.62		8.71	34.26
	Swift's Red Steer Brand Rice Mixture 4-10-0 Guarantee	4.00	10.00		22.60
65284	Analysis	4.31	7.46		20.04
65682	Analysis	3.97	7.65		19.48
	Swift's Red Steer Brand Superphosphate 18% Fertilizer Guarantee		18.00		23.40
64700	Analysis		21.53		27.99
	Swift's Red Steer Brand Superphosphate 20% Guarantee		20.00		26.00
64711	Analysis		21.19		27.55
64712	Analysis		21.35		27.76
64861	Analysis		21.21		27.57
64876	Analysis		19.74		25.66
	Vigoro Guarantee	4.00	12.00	4.00	30.00
64702	Analysis	4.38	11.36	4.41	30.57
64740	Analysis	4.33	10.39	4.34	29.11

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Swift and Company Fertilizer Works, Harvey and Shreveport, Louisiana and Houston, Texas					
Vigoro Guarantee—Continued—					
64779	Analysis	4.24	11.49	4.04	29.97
64884	Analysis	4.41	10.01	4.63	29.15
Synthetic Nitrogen Products Corporation, New York, New York					
Calcium Nitrate (Nitrate of Lime) Guarantee					
64751	Analysis	15.00			36.00
	Analysis	15.12			36.29
Temple Cotton Oil Company, North Little Rock, Arkansas					
Quapaw 4-8-4 Guarantee					
65362	Analysis	4.00	8.00	4.00	24.80
65461	Analysis	3.81	8.11	3.65	24.06
	Analysis	3.64	7.88	3.58	23.29
Quapaw 4-12-4 Guarantee					
65358	Analysis	4.00	12.00	4.00	30.00
	Analysis	4.21	11.79	3.41	29.52
Quapaw 6-10-7 Guarantee					
65359	Analysis	6.00	10.00	7.00	35.80
	Analysis	6.02	10.42	6.41	35.69
Quapaw 10-20-10 Guarantee					
65408	Analysis	10.00	20.00	10.00	62.00
	Analysis	9.53	19.49	10.06	60.28
Quapaw Brand 4-8-6 Guarantee					
65357	Analysis	4.00	8.00	6.00	27.20
65469	Analysis	4.07	7.90	5.42	26.54
	Analysis	4.04	8.32	5.00	26.52
Texas Farm Products Company, Nacogdoches, Texas					
Lone Star Brand 3-10-3 Fertilizer Guarantee					
64900	Analysis	3.00	10.00	3.00	23.80
64918	Analysis	4.09	10.11	3.14	26.73
65163	Analysis	4.11	10.25	3.16	26.98
65253	Analysis	3.23	10.12	3.11	24.64
65302	Analysis	3.27	9.88	3.13	24.45
65618	Analysis	3.46	8.93	3.27	23.83
	Analysis	3.38	10.01	3.26	25.03
Lone Star Brand 4-8-4 Fertilizer Guarantee					
64917	Analysis	4.00	8.00	4.00	24.80
65117	Analysis	3.96	8.19	3.92	24.85
65152	Analysis	4.18	8.12	4.18	25.61
65162	Analysis	4.03	8.64	4.03	25.74
65247	Analysis	4.10	8.01	4.03	25.09
65303	Analysis	4.08	8.26	3.74	25.02
65307	Analysis	3.87	7.87	4.11	24.45
65308	Analysis	4.06	8.18	4.03	25.21
65346	Analysis	4.02	8.03	4.02	24.91
65494	Analysis	4.04	7.79	4.05	24.69
65522	Analysis	4.08	8.68	4.06	25.94
65531	Analysis	4.06	8.47	4.15	25.73
65565	Analysis	4.04	8.06	4.04	25.03
65617	Analysis	4.06	7.94	4.11	24.99
65651	Analysis	4.08	8.49	4.20	25.87
65680	Analysis	4.01	8.05	4.07	24.97
65707	Analysis	4.11	8.13	4.02	25.25
	Analysis	3.99	7.99	4.09	24.88
Lone Star Brand 4-8-6 Fertilizer Guarantee					
64962	Analysis	4.00	8.00	6.00	27.20
65161	Analysis	4.08	7.69	5.79	26.74
65293	Analysis	4.30	8.20	6.06	28.25
65376	Analysis	3.86	7.85	6.02	26.69
65458	Analysis	4.12	8.29	6.06	27.94
65616	Analysis	4.01	8.00	5.67	26.82
65642	Analysis	4.06	7.89	6.05	27.26
	Analysis	4.08	8.10	5.81	27.29
Lone Star Brand 4-10-0 Fertilizer Guarantee					
65193	Analysis	4.00	10.00		22.60
	Analysis	4.27	10.50		23.90
Lone Star Brand 4-12-4 Fertilizer Guarantee					
64898	Analysis	4.00	12.00	4.00	30.00
64909	Analysis	4.08	12.23	4.03	30.53
64923	Analysis	4.05	12.22	4.03	30.45
65033	Analysis	4.06	12.00	4.03	30.18
	Analysis	4.09	12.28	4.35	31.00

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid,	Available phosphoric acid, per cent	Valuation found, per ton
Texas Farm Products Company, Nacogdoches, Texas—					
—Continued.					
Lone Star Brand 4-12-4 Fertilizer Guarantee—					
Continued—					
65063	Analysis	4.01	12.02	4.28	30.39
65100	Analysis	4.12	12.25	4.04	30.67
65116	Analysis	4.06	12.00	4.44	30.67
65153	Analysis	4.02	12.11	4.29	30.54
65164	Analysis	4.38	12.11	4.38	31.51
65198	Analysis	3.94	12.26	4.33	30.60
65215	Analysis	4.04	11.72	4.32	30.12
65292	Analysis	3.98	12.12	4.08	30.21
65314	Analysis	4.21	12.62	4.19	31.54
65556	Analysis	4.26	12.07	4.33	31.11
65666	Analysis	4.19	12.09	4.25	30.88
65679	Analysis	4.29	12.02	4.17	30.93
Lone Star Brand 6-8-4 Fertilizer Guarantee		6.00	8.00	4.00	20.60
64899	Analysis	5.95	9.14	3.84	30.77
Lone Star Brand 6-9-3 Fertilizer Guarantee		6.00	9.00	3.00	29.70
65194	Analysis	5.99	9.08	3.19	30.01
65495	Analysis	6.03	9.44	2.87	30.18
Lone Star Brand 6-10-7 Fertilizer Guarantee		6.00	10.00	7.00	35.80
64919	Analysis	5.93	10.12	6.92	35.69
64963	Analysis	5.96	10.09	7.04	35.87
65065	Analysis	5.91	9.69	7.21	35.43
65072	Analysis	6.03	10.01	7.13	36.04
65131	Analysis	5.91	10.15	7.09	35.89
65154	Analysis	5.84	10.30	7.28	36.15
65160	Analysis	5.97	10.00	7.21	35.98
65248	Analysis	6.06	10.42	7.25	36.79
65304	Analysis	5.84	10.17	6.73	35.32
65309	Analysis	5.95	10.19	7.17	36.13
65581	Analysis	5.86	10.15	6.80	35.42
65619	Analysis	6.05	10.29	7.10	36.42
Lone Star Brand 6-12-6 Fertilizer Guarantee		6.00	12.00	6.00	37.20
65062	Analysis	6.00	12.24	6.03	37.55
65165	Analysis	6.01	12.16	6.05	37.49
65340	Analysis	5.97	12.22	6.12	37.56
Lone Star Brand 10-10-0 Fertilizer Guarantee		10.00	10.00		37.00
65530	Analysis	10.04	10.41		37.63
65569	Analysis	10.19	10.36		37.93
65615	Analysis	10.46	10.07		38.19
65647	Analysis	10.12	10.05		37.36
Lone Star Brand Nitrate of Soda Guarantee		16.00			38.40
65755	Analysis	16.32			39.17
Lone Star Brand Sulphate of Ammonia Guarantee		20.00			48.00
65652	Analysis	20.34			48.82
65754	Analysis	20.10			48.24
Lone Star Brand 20% Superphosphate Guarantee			20.00		26.00
65178	Analysis		21.54		28.00
Tri-State Fertilizer and Lumber Company,					
Shreveport, Louisiana					
Red Diamond 4-8-4 Fertilizer Guarantee		4.00	8.00	4.00	24.80
64994	Analysis	4.50	8.40	4.91	27.61
65323	Analysis	4.31	7.44	4.12	24.95
Red Diamond 6-10-7 Fertilizer Guarantee		6.00	10.00	7.00	35.80
65416	Analysis	6.63	9.35	7.57	37.15
Tyler Fertilizer Company, Tyler, Texas					
4-8-4 Fertilizer Heart Brand Guarantee		4.00	8.00	4.00	24.80
65044	Analysis	4.10	7.83	4.04	24.87
65465	Analysis	4.02	8.63	3.77	25.39
65539	Analysis	4.04	8.12	3.79	24.81
65734	Analysis	4.08	7.88	4.07	24.91

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Tyler Fertilizer Company, Tyler, Texas—Continued.					
65043	4-8-6 Fertilizer Heart Brand Guarantee	4.00	8.00	6.00	27.20
65542	Analysis	4.06	8.41	5.35	27.09
65732	Analysis	4.04	8.05	5.11	26.30
	Analysis	4.08	8.21	6.02	27.70
65021	4-12-4 Fertilizer Heart Brand Guarantee	4.00	12.00	4.00	30.00
65541	Analysis	3.93	12.03	4.03	29.91
65735	Analysis	4.04	11.93	4.04	30.06
	Analysis	4.15	11.53	4.40	30.23
65586	6-8-4 Fertilizer Heart Brand Guarantee	6.00	8.00	4.00	29.60
65733	Analysis	5.97	9.18	3.91	30.95
	Analysis	6.08	8.29	4.46	30.85
65022	6-9-3 Fertilizer Heart Brand Guarantee	6.00	9.00	3.00	29.70
65585	Analysis	5.92	9.04	3.82	30.54
	Analysis	6.30	8.30	4.06	30.78
64984	6-10-7 Fertilizer Heart Brand Guarantee	6.00	10.00	7.00	35.80
65042	Analysis	6.42	10.06	7.59	37.60
	Analysis	6.04	9.99	7.40	36.27
65540	10-0-10 Fertilizer Heart Brand Guarantee	10.00		10.00	36.00
65731	Analysis	8.89		10.18	33.56
	Analysis	11.09		10.08	38.72
United Chemical Company, Dallas, Texas					
65449	"King Cotton" Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	23.80
65636	Analysis	2.96	9.20	3.25	22.96
	Analysis	3.32	10.55	1.05	22.95
65114	"King Cotton" Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
	Analysis	4.04	8.05	4.43	25.49
65347	King Cotton P 12 Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65351	Analysis	4.08	6.89	4.26	23.86
65648	Analysis	4.02	7.41	4.49	24.67
65659	Analysis	3.55	7.44	4.23	23.27
65712	Analysis	3.75	7.48	3.63	23.08
	Analysis	3.83	8.06	3.79	24.22
65597	King Cotton P 16 Fertilizer 4-12-4 guarantee	4.00	12.00	4.00	30.00
	Analysis	4.08	12.76	3.73	30.86
65448	Peanut Maker P 14 Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	23.80
	Analysis	3.01	10.12	3.49	24.57
65696	"Rice Maker" Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	23.80
	Analysis	2.93	10.18	3.24	24.15
64920	"Sunset Brand" Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65002	Analysis	4.21	8.86	4.04	26.47
65104	Analysis	4.11	8.14	3.75	24.94
65286	Analysis	4.00	9.65	3.09	25.86
65446	Analysis	4.02	8.02	3.57	24.36
65483	Analysis	3.20	6.92	3.92	21.38
65506	Analysis	4.09	6.91	3.79	23.35
65526	Analysis	3.83	7.50	3.27	22.86
65610	Analysis	3.90	8.14	3.83	24.54
65674	Analysis	3.88	8.24	3.64	24.39
65710	Analysis	4.18	7.64	3.22	23.82
	Analysis	3.52	7.63	4.04	23.22
65101	"Sunset Brand" Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	27.20
	Analysis	4.02	8.41	6.25	28.08
64921	"Sunset Brand" Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	30.00
65105	Analysis	4.17	11.86	4.05	30.29
65132	Analysis	4.10	11.70	4.37	30.29
65184	Analysis	4.18	12.22	4.04	30.77
65238	Analysis	4.12	12.10	3.71	30.07
65348	Analysis	3.96	11.84	3.78	29.43
65675	Analysis	4.04	11.93	4.06	30.08
	Analysis	3.93	12.17	4.03	30.09
65756	"Sunset Brand" Fertilizer 6-8-8 Guarantee	6.00	8.00	8.00	34.40
	Analysis	5.50	7.24	7.23	31.29

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
United Chemical Company, Dallas, Texas—Continued.					
	"Sunset Brand" Fertilizer 6-10-7 Guarantee	6.00	10.00	7.00	35.80
65122	Analysis	6.28	9.87	7.12	36.44
65205	Analysis	6.19	10.46	7.03	36.90
65237	Analysis	6.04	10.23	7.18	36.42
65484	Analysis	5.94	8.34	7.17	33.70
65525	Analysis	6.22	10.24	7.36	37.07
65568	Analysis	5.59	9.85	6.18	33.65
65658	Analysis	5.66	7.95	6.84	32.13
65678	Analysis	5.49	9.58	7.29	34.44
	"Sunset Brand" Fertilizer 6-12-6 Guarantee	6.00	12.00	6.00	37.20
65106	Analysis	5.87	12.67	5.14	36.73
65320	Analysis	5.87	12.09	5.12	35.95
65713	Analysis	5.69	10.36	5.69	33.96
	"Sunset Brand" Fertilizer 10-10-0 Guarantee	10.00	10.00		37.00
65711	Analysis	10.29	10.32		38.12
	"Sunset Brand" Fertilizer 20% Superphosphate Guarantee		20.00		26.00
65175	Analysis		21.30		27.69
	Sunset Brand Fertilizer "Truck and Fruit Special" 4-8-6 Guarantee	4.00	8.00	6.00	27.20
64922	Analysis	4.14	8.02	5.81	27.34
65003	Analysis	3.88	7.18	5.67	25.44
65004	Analysis	3.85	7.21	6.27	26.13
65511	Analysis	4.23	8.32	6.06	28.24
65757	Analysis	3.87	7.66	5.79	26.20
	"United Plantfood" 0-12-4 "Rice Special" Guarantee		12.00	4.00	20.40
65695	Analysis		12.09	3.76	20.23
	"United Plantfood" 3-10-0 Guarantee	3.00	10.00		20.20
65328	Analysis	3.36	10.66		21.92
65576	Analysis	3.04	10.49		20.94
	"United Plantfood" 3-10-3 Guarantee	3.00	10.00	3.00	23.80
65537	Analysis	2.91	10.33	3.27	24.33
	"United Plantfood" 4-8-4 Guarantee	4.00	8.00	4.00	24.80
65471	Analysis	3.44	6.83	4.76	22.86
65604	Analysis	3.30	7.58	4.13	22.73
	"United Plantfood" 4-10-0 "Rice Special" Guarantee	4.00	10.00		22.60
65327	Analysis	3.95	10.07		22.57
	"United Plantfood" 4-12-4 Guarantee	4.00	12.00	4.00	30.00
65137	Analysis	4.00	12.01	3.75	29.71
65199	Analysis	4.10	11.84	4.03	30.07
65252	Analysis	4.16	12.15	4.24	30.87
65603	Analysis	4.05	12.00	4.02	30.14
	"United Plantfood" 6-9-3 Guarantee	6.00	9.00	3.00	29.70
65602	Analysis	6.20	8.14	3.14	29.23
	"United Plantfood" 6-10-7 Guarantee	6.00	10.00	7.00	35.80
65138	Analysis	6.22	10.06	7.49	37.00
65185	Analysis	5.23	9.58	5.29	31.35
65601	Analysis	5.87	9.00	7.19	34.41
	"United Plantfood" 6-12-6 Guarantee	6.00	12.00	6.00	37.20
64737	Analysis	6.23	11.61	5.80	37.00
64818	Analysis	6.21	12.07	5.51	37.20
64820	Analysis	6.42	11.87	4.98	36.82
64821	Analysis	5.03	11.84	5.85	34.48
64822	Analysis	5.79	11.73	6.15	36.53
65078	Analysis	6.21	12.35	5.05	37.02
65115	Analysis	6.02	12.07	5.79	37.09
65200	Analysis	6.39	11.90	6.26	38.32
	"United Plantfood" 18% Superphosphate Guarantee		18.00		23.40
65332	Analysis		21.57		28.04
	"United Plantfood" 20% Superphosphate Guarantee		20.00		26.00
64736	Analysis		20.04		26.05
64819	Analysis		21.08		27.40
65697	Analysis		20.32		26.42

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
United Chemical Company, Dallas, Texas—Continued.					
“United Plantfood” Fertilizer Truck and Fruit Special					
	4-8-6 Guarantee	4.00	8.00	6.00	27.20
65217	Analysis	4.18	8.83	6.06	28.78
65600	Analysis	3.92	7.69	6.05	26.67
Virginia-Carolina Chemical Corporation, Shreveport, Louisiana					
	V-C Blood, Bone and Potash Guarantee	3.00	10.00	3.00	23.80
64811	Analysis	3.14	10.56	3.51	25.48
	V-C Fertilizers 3-10-3 Guarantee	3.00	10.00	3.00	23.80
65305	Analysis	3.02	9.72	3.14	23.66
65660	Analysis	3.15	9.62	3.01	23.68
	V-C Fertilizers 4-8-4 Guarantee	4.00	8.00	4.00	24.80
64985	Analysis	4.12	7.79	4.31	25.19
65045	Analysis	3.99	8.16	4.04	25.04
65061	Analysis	4.06	8.03	4.16	25.17
65093	Analysis	3.94	7.85	4.03	24.51
65341	Analysis	4.10	8.22	4.35	25.75
65403	Analysis	3.95	8.06	4.05	24.82
65442	Analysis	4.19	8.37	4.15	25.92
65450	Analysis	3.88	8.00	4.26	24.82
65456	Analysis	4.10	8.42	4.01	25.60
65482	Analysis	4.08	7.68	4.24	24.86
65535	Analysis	4.00	8.17	4.15	25.20
65650	Analysis	3.99	8.07	3.97	24.83
65661	Analysis	4.08	8.53	4.25	25.98
65743	Analysis	4.06	8.66	4.34	26.21
65749	Analysis	3.94	8.56	4.17	25.59
	V-C Fertilizers 4-8-6 Guarantee	4.00	8.00	6.00	27.20
65087	Analysis	3.96	7.73	6.04	26.80
65090	Analysis	3.93	8.07	6.04	27.17
65259	Analysis	3.89	6.93	6.04	25.60
65379	Analysis	4.04	7.42	5.89	26.42
65457	Analysis	3.93	8.37	5.89	27.38
65497	Analysis	4.02	8.26	5.90	27.47
65510	Analysis	4.02	7.51	5.92	26.51
65742	Analysis	4.20	8.04	6.23	28.01
65764	Analysis	4.02	7.83	6.08	27.13
	V-C Fertilizers 4-12-4 Guarantee	4.00	12.00	4.00	30.00
65058	Analysis	4.23	11.66	4.31	30.48
65316	Analysis	3.95	12.39	3.86	30.22
65566	Analysis	4.09	12.51	3.97	30.84
65629	Analysis	4.17	12.00	4.06	30.48
65706	Analysis	3.95	12.01	4.05	29.95
	V-C Fertilizers 6-8-4 Guarantee	6.00	8.00	4.00	29.60
64976	Analysis	6.16	8.03	4.12	30.16
65047	Analysis	5.94	8.07	4.19	29.78
65350	Analysis	5.88	8.02	4.09	29.45
65422	Analysis	6.04	8.26	4.06	30.11
65551	Analysis	6.06	8.28	4.10	30.22
	V-C Fertilizers 6-8-8 Guarantee	6.00	8.00	8.00	34.40
65423	Analysis	5.77	8.19	8.02	34.13
	V-C Fertilizers 6-9-3 Guarantee	6.00	9.00	3.00	29.70
65046	Analysis	5.93	9.70	3.20	30.68
65552	Analysis	5.32	10.47	3.32	30.36
65621	Analysis	5.32	9.30	3.07	28.54
	V-C Fertilizers 6-10-7 Guarantee	6.00	10.00	7.00	35.80
64977	Analysis	6.08	10.63	7.13	36.97
65023	Analysis	6.06	10.25	7.29	36.62
65064	Analysis	6.00	10.24	7.22	36.37
65070	Analysis	5.86	9.37	6.87	34.48
65222	Analysis	6.02	10.25	7.18	36.40

Table 9. Analysis of commercial fertilizer, season 1939-40 (cont.)

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Virginia-Carolina Chemical Corporation, Shreveport, Louisiana—Continued.					
V-C FeFertilizers 6-10-7 Guarantee—Continued—					
65622	Analysis	6.02	8.92	7.46	35.00
65635	Analysis	5.83	10.63	7.14	36.38
V-C Fruit and Truck Special Guarantee					
65079	Analysis	6.00	10.00	7.00	35.80
65158	Analysis	6.05	10.28	7.19	36.51
V-C Good Luck Fertilizer Guarantee					
64812	Analysis	5.97	10.15	7.12	36.07
V-C Potato Special Guarantee					
64957	Analysis	4.00	8.00	4.00	24.80
65224	Analysis	4.16	8.46	4.20	26.02
65380	Analysis	4.00	8.00	10.00	32.00
65763	Analysis	3.89	7.86	9.54	31.01
V-C Prolific Cotton Grower Guarantee					
65223	Analysis	3.80	7.44	10.03	30.83
65278	Analysis	4.04	8.33	9.59	32.04
64967	Analysis	4.02	7.76	9.29	30.89
64971	Analysis	3.00	10.00	3.00	23.80
V-C Special 4-10-0 Fertilizer Guarantee					
65634	Analysis	3.28	9.58	3.39	24.39
V-C Truckers Special Guarantee					
65317	Analysis	4.00	10.00		22.60
65367	Analysis	4.06	10.89		23.90
V-C 20% Superphosphate Guarantee					
64732	Analysis	4.00	8.00	6.00	27.20
Waldo Fertilizer Works, Waldo, Arkansas					
64731	Analysis	3.90	8.28	6.10	27.44
Victory 6-10-7 Guarantee					
64731	Analysis	3.82	7.65	6.31	26.69
Chas. F. Ward, San Antonio, Texas					
64731	Analysis		20.00		26.00
Grasstonia Guarantee					
64731	Analysis		22.04		28.65
Vita-Glo-Gro with Ward's Root Rot Remedy					
64731	Analysis	6.00	10.00	7.00	35.80
64731	Analysis	6.36	10.66	6.75	37.22
64731	Analysis	6.33	10.74	7.04	37.60
Guarantee					
64731	Analysis	4.00	12.00	4.00	30.00
64731	Analysis	8.85	14.29	5.71	46.67
64731	Analysis	4.00	10.00	4.00	27.40
64731	Analysis	6.41	11.46	3.62	34.62